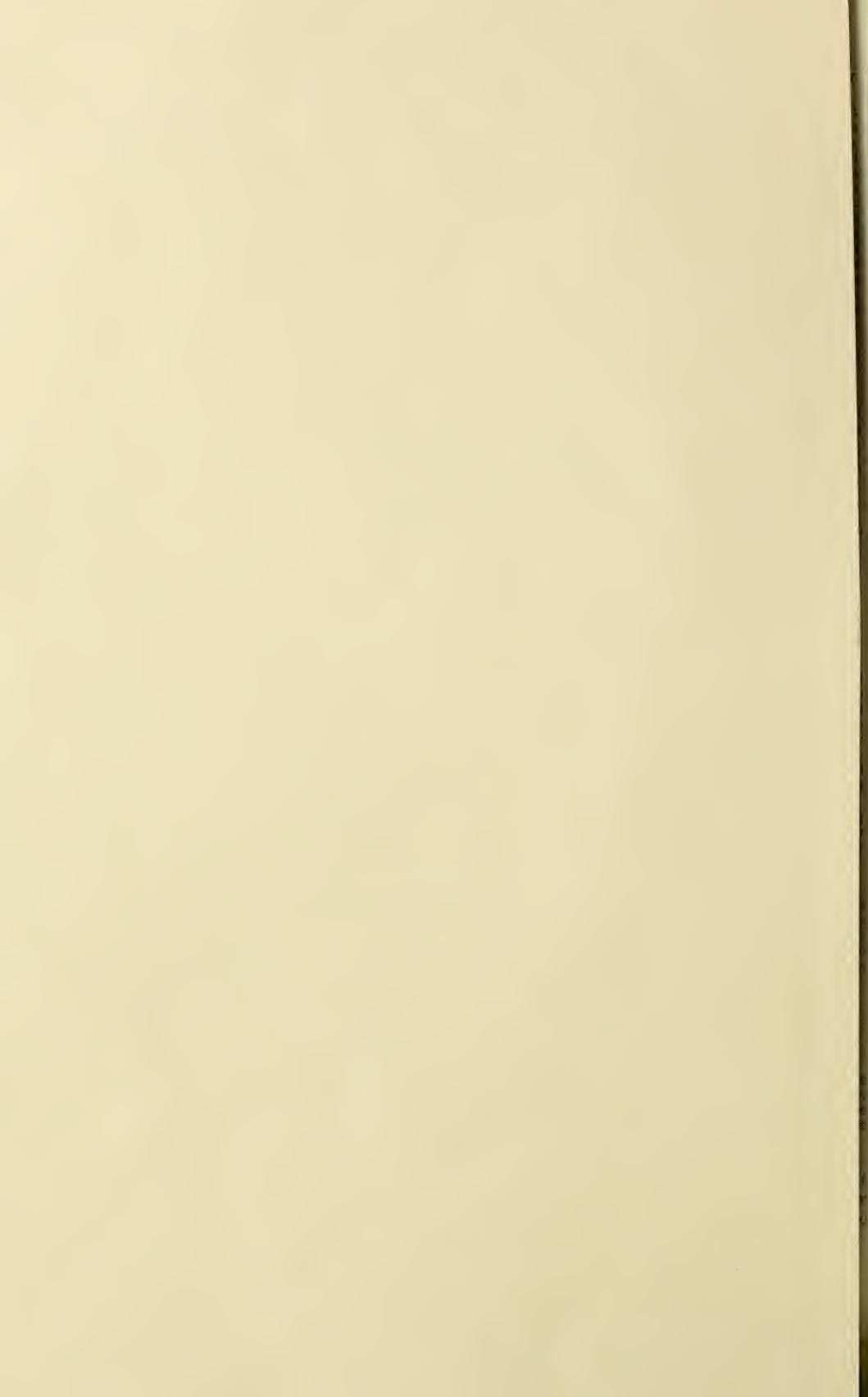
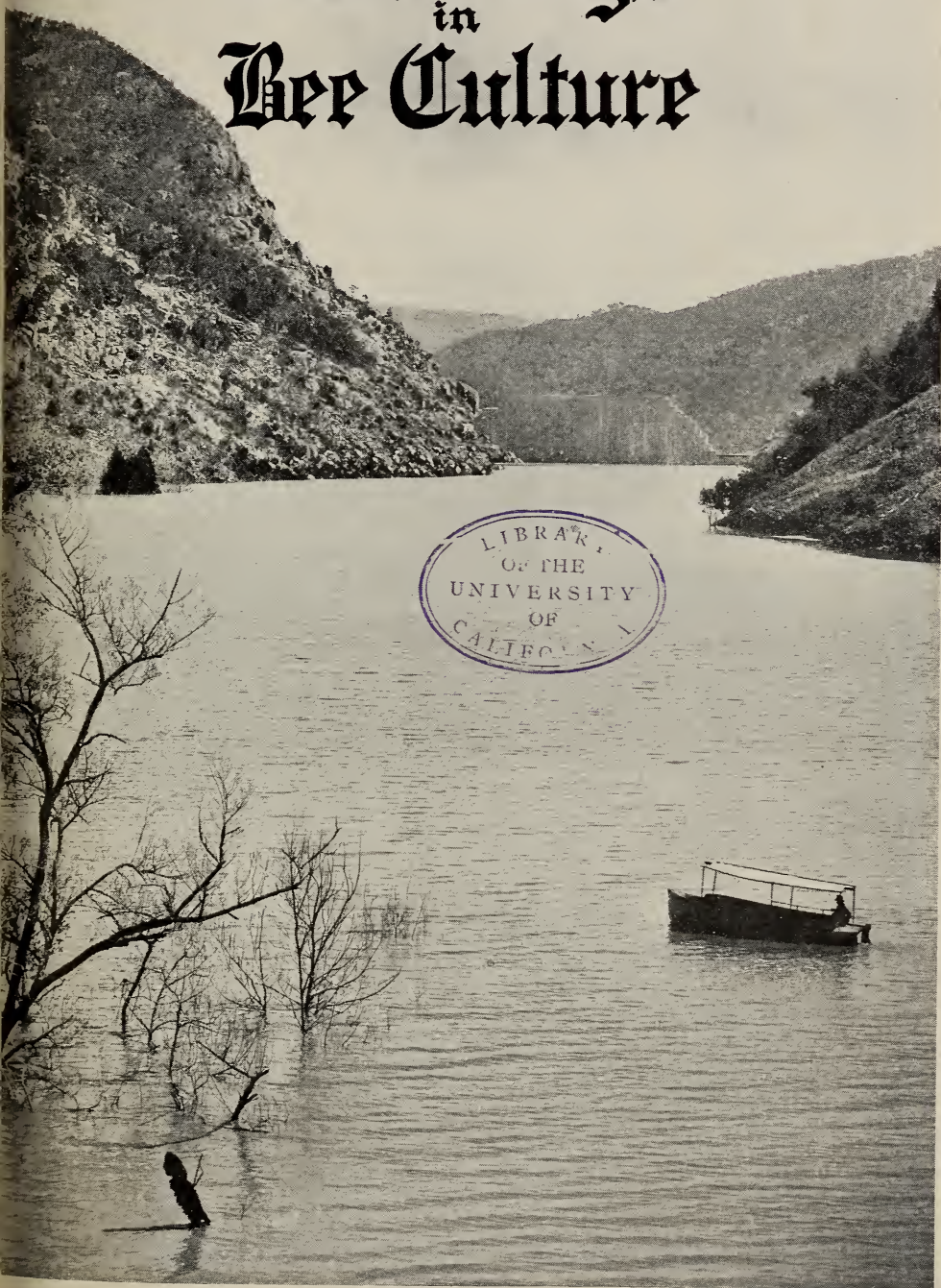


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Gleanings in Bee Culture



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BEEKEEPING

By Dr. E. F. PHILLIPS

One of the best bee-books that has been written in this decade.

See the editorial review on page 834, October 15.

Regular price \$2.00; or clubbed with "Gleanings in Bee Culture," one year, for \$2.50; or with our "A B C and X Y Z of Bee Culture," \$3.50.

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One would naturally suppose that its author, a scientific man—a trained entomologist, and one who is constantly associated with some of the best scientists of the Government—would turn out a book that would be so technically scientific that it would be beyond the reach of the average beekeeper. This is not the case. While it is scientific, it is couched in such language and style that the average reader can easily understand it. But when we say it is scientific, we might, without further qualification, convey the impression that it is not also practical. As a matter of fact, the book is intensely so, because Dr. Phillips has traveled all over the United States, mingling with the best beekeepers in the country, and he has had, during several years back, one of the best beekeepers in the country, Mr. George F. Demuth, as his first assistant.

The A. I. Root Company, Medina, Ohio

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EDITORIALS

The Ohio State Convention at Akron, Nov. 26, 27

A SPLENDID program is in preparation, and a number of speakers from various parts of the state, including Dr. E. F. Phillips, of Washington, D. C., will be present. Indications go to show that this will probably be the best convention we have ever held.

Mr. A. J. Halter, of Akron, writes: "I have made arrangements at Garfield Hotel for visitors for convention, Nov. 26 and 27. Rates \$1.00 per day for single rooms, \$1.50 with bath, or \$1.50 per double room."

Of course the Root forces will be present, and some have expressed a desire to go, after the convention, from Akron to Medina in automobiles to visit the Root plant. If the roads are good the trip can be very easily made, as Medina is only 20 miles west of Akron. Visitors are always welcome at Medina.

Akron is the rubber city of the world. It makes more automobile tires and rubber specialties than all the rest of the United States put together, and it possibly equals the output of all the rest of the world. We understand an opportunity will be given to the Ohio beekeepers to go through one of the biggest plants at the close of one of the sessions.

Motor-cycle Accident to one of the Men Formerly Connected with The A. I. Root Company's Apiaries

REV. GEO. W. PHILLIPS, formerly of Jamaica, B. W. I., and later foreman of the apiaries of the A. I. Root Company, author of "Modern Queen-rearing," and the A. I. Root Company's Correspondence Course in Beekeeping, met with a severe motor-cycle accident from which he nearly lost his life. He suffered a fractured skull, a broken arm, and a shattered kneecap. However, he is now on the rapid road to recovery, and perhaps the only permanent injury will be a stiff knee.

Mr. Phillips, after he left Medina, took

a college course, and later a seminary course, graduating with high honors. He has been connected with various large churches, and is now pastor of the First Baptist Church, Hamilton, Ohio. He not only can preach Christ, but he can talk bees. Besides his long experience in managing our series of yards and raising queens in small baby nuclei at Medina, he owned and operated several large apiaries in Jamaica before he came to this country.

Right Church, but Wrong Pew

Two recipes, pages 812 and 813, Oct. 1, got separated. Some one may be following a recipe for pudding sauce and expecting it to turn out fruit cookies.

The last recipe in the first column, page 812, entitled "Cookies," should be followed by the third recipe in the first column, page 813, which has no title, but reads as follows: "Fruit cookies are made in the same way," etc.

The completed recipe should read as follows:

COOKIES.

One cup extracted honey; one cup light-brown sugar; 2 eggs well beaten; a level tablespoonful of soda dissolved in 3 tablespoonfuls of vinegar; pinch of salt; flour to stiffen (about 3 cupfuls in this altitude). Mix at night, and bake in the morning.

Fruit cookies are made the same as the above by adding one cup of shortening, one cup of chopped raisins; $\frac{1}{4}$ teaspoonful of cinnamon and allspice; $\frac{1}{2}$ teaspoonful cloves and nutmeg; cream sugar and shortening, and proceed as above.

Colo, Iowa.

MRS. OSCAR TRIPP.

The Insects' Homer

AT Avignon, in southern France, Henri Fabre recently died at the age of ninety-two. Probably not one beekeeper in ten ever studied Henri Fabre, yet he was one of the very few most learned entomologists in the world, a member of the small and obscure group of men who have given their lives to the study of insects, and to the study of the honeybee among the rest.

He pursued his investigations under great

difficulties. With the responsibilities of a large family to meet he was forced to give almost his whole time to teaching mathematics, reserving only odd moments for entomology. Notwithstanding his hardships, he early became an authority in his chosen work, and formed friendships with such men as Charles Darwin and Victor Hugo. It was Hugo who called him "the insects' Homer" on account of his literary ability.

His greatest work, "Souvenirs Entomologiques," contains many valuable observations on the ways of honeybees, and has placed him among the authorities in apiculture. In an editorial on Henri Fabre, *The Outlook* says that it was through conversation with him that Maurice Maeterlinck was inspired to write "The Life of the Bee." Of him Maeterlinck himself wrote, "He is one of the most profound scholars, purest writers, and finest poets of the century just passed."

Bees Blamed Again for the Work of the Birds

A WOMAN living near one of our outapiaries telephoned to us about the middle of October, inquiring if there was any way that she could keep the bees away from her grapes. She said that they were simply spoiling the crop. We asked if she hadn't seen birds around the grapes, and she said that she had, but didn't think that they were eating the grapes. We asked her to tell what kinds of birds she had seen, and she said they looked like small sparrows. There are a number of birds that eat grapes, and we believe sparrows have been caught in the act.

It so happened, however, that, just before this woman telephoned to us, a farmer living near Medina sent in two birds that he shot while in the very act of puncturing his grapes. He did not know what kind of birds they were, and was anxious to have them identified. A local ornithologist examined them, and showed us that they were Cape May warblers. We, therefore, explained to the woman mentioned above that in all probability the birds were Cape May warblers—that they merely punctured the grapes and the bees afterward sucked the skins dry. We told her that bees could not puncture sound fruit, and explained why they could not. She then said she had wondered why the bees paid no attention to the grapes under the roof of their porch where the birds did not come, but worked only on those outside the roof where she had seen the birds frequently.

The Cape May warblers are notorious

grape-eaters. Unless they are watched closely, however, they cannot be caught in the act, for they merely pierce the skin, making a very slight puncture, and then go to another grape. The bees, meanwhile, sucking the juices out of the fruit already spoiled, nearly always get the blame. As has been proven many times, bees will pay no attention to sound fruit. If the skin is pierced by even a fine needle, however, the bees will "get busy."

The warblers, contrary to what might be expected from their name, do not sing much. They have merely a sort of short chirrup.

The birds at this time of the year were on their way south. They winter even as far south as Central America, and in the spring migrate as far north as Canada. They remain in the north-central states a week or more in the spring on their way north, and perhaps the same length of time in the fall on their way south. It is on their southern trip that they do the most damage to the grapes, for a whole flock of them sometimes almost takes possession of a vineyard. The only remedy is to use the shotgun and thus kill and frighten them away.

The following very complete description is from "Birds of Eastern North America," by Frank M. Chapman:

Dendroica tigrina, Cape May warbler. Adult male, crown black, slightly tipped with greenish; *ear-coverts* *rufous*, bounded behind by a large yellow patch on the side of the neck; back olive-green, broadly streaked with black; rump yellow or greenish yellow; a large white patch on the wing-coverts; outer tail feathers with a large white patch on their inner webs, near the tip; under parts yellow, heavily streaked with black; lower belly and under tail-coverts whitish. Adult female, upper parts grayish olive-green; rump yellowish; a yellow line over the eye; middle wing-coverts with narrow white tips; outer tail-feathers with a white patch on their inner webs near the tip; under parts yellow, streaked with black; belly and under tail-coverts whiter. Immature male resembles the female, but the wing-coverts have more white. Immature female is similar to adult female, but with little or no yellow on the under parts. L., 5.00; W., 2.61; T., 1.88; B. from N., 30.

Range.—Eastern North America; breeds from Northern New England north to Hudson Bay; winters in the tropics.

Washington, sometimes very common, usually uncommon T. V.,* May 5 to 20; Aug. 25 to Oct. 7. Sing Sing, tolerably common T. V., Aug. 20 to Oct. 1. Cambridge, rare T. V., May 15 to 25; Aug. 25 to Sept. 15.

Nest, partially pensive, of twigs and grass fastened with spiders' webbing, lined with horsehair on a low branch of a small tree in pasture or open woodland. *Eggs*, three to four, dull white or buffy, slightly specked, and wreathed around the larger end with spots of brown and lilac, .70 by .50 (Chamberlain).

* Transient visitant. These warblers are very useful visitors in orchards. A flock of warblers is said to be worth several barrels of spraying emulsion in getting rid of grubs and insects.—ED.

Our Cover Picture

OUR cover page this issue is from far-off Australia. In that country they have recently begun to realize the immense value of water for irrigation purposes. Back a few hundred miles from the coast of New South Wales there are millions of acres of intensely fertile land which, under normal conditions of from five to eight inches rainfall per annum produce only a few blades of not too succulent grass, sufficient, perhaps, for keeping a sheep alive on each five acres of land.

The illustration shows an immense reservoir that has been made away up in the hills, impounding quite a small lake, and this water has been led out on to the plains, a distance of 430 miles away.

The land watered has been re-purchased by the government, and is let out to settlers at a comparatively low rental. Although only three years since the water has been applied quite a change has come over the country. Alfalfa hay yields seven cuttings per annum, and with that sheep and cattle are fed and fattened in considerable number per acre. Fruit trees show marvelous growth, and to help dispose of the crops large canning and drying works and a very fine butter-factory have been established.

Quite a large village or shopping center is forming. Several churches have been built, and public schools established.

Several beekeepers have located on the Murrumbidgee Irrigation Area, as it is called, and no doubt they will get good results before long. The picture has been supplied to us by Mr. Herbert J. Rumsey, of Dundas, N. S. W., who has recently paid us a visit at Medina.

Insure your Product's Reputation

THE extent to which the courts go in protecting one's rights to the use of his own name as a business asset is shown in several recent trade-mark suits. "But are we interested in trade-marks?" inquires a beekeeper. You are. No large business in honey or in any other product can be built up without some distinguishing name of the product, and once a profitable business is established unfair competition may arise, involving trade-mark difficulties.

One can protect his name pretty fully, even though some one else of the same name is engaged in the same business, writes Mr. C. J. Williamson, the well-known patent attorney of Washington, D. C. A producer can defend it to the extent of requiring a competitor to use initials or full name to

distinguish the competitor's product from his own, and can sometimes even force his competitor to use some sentence pointing out the distinction.

The immense amount of litigation over trade-marks simply shows how great is their value to the producer. Among the business principles familiar to large producers of other foods and of value to honey producers as well, not the least of these is the subject of trade-marks.

Winter Packing in Rows vs. Packing in Quadruple Winter Cases

THE method of packing as illustrated and described by R. C. Gifford in this issue, page 929, has been used to a considerable extent. It is so old that probably no one can claim priority in its use. But even if it is old, it has some good features. It has the advantage over the four-in-a-case scheme (1) in that it is much more economical; (2) that the entrances of the hives can face the direction where there is the least wind exposure. This last feature is a very important one. Where the hives are packed four in a case, back to back and side to side, it naturally follows that one pair of hives must have entrances directly opposite the entrances of the other pair. If one pair faces south, the other pair faces north, and that is very bad; so it is usually recommended to place the entrances facing east and west. In most localities strong heavy winds come from the west, and fitful storms from the east. Taking everything into consideration, a southern exposure is the most favorable, and this can be permitted only when the hives are packed as described by our correspondent on page 929. But the arrangement has the slight disadvantage that the back ends of the hives are not protected like the back ends of hives in a quadruple case. In the last named there is only one side and one front next to the packing; and the packing is next to the weather, and, what is of considerable importance, the grouping of the four hives together concentrates and conserves the heat. In the plan spoken of by R. C. Gifford there are two ends that are exposed to the weather. In the case of the inner hives in the row the advantage would be slightly in favor of the long-row packing except for the conservation of heat in the four. Another disadvantage of the long case is that the bees must be unpacked earlier than in the quadruple case.

But the most serious disadvantage, according to a number of reports, is the drifting of the bees from one entrance to

another on good fly days. The stronger colonies in the row will draw from the weaker. When the weather is favorable, the flying bees in the air are inclined to join the procession where there are the most bees flying, and they will be in front of the strongest colonies, of course. The result is, the stronger grow stronger at the expense of the weaker.

The same thing can occur where the hives are packed in groups of four; but to a very much less extent because there are only two colonies on one side and the bees of either are not as likely to get confused as they are when there are a dozen entrances side by side. Dr. C. C. Miller says when colonies are put in pairs bees don't drift much. If this is true, the quadruple scheme is much superior.

This is a fruitful theme for discussion, and we should like to have those of our subscribers who have tried the two methods tell us about them; or if you have tried only the long-row scheme of packing, tell us of the objections, if any, that exist against the plan.

That New or Old Bee Disease; More Data Needed

ON page 784, Oct. 1, we said something about the new disease or malady that has been so destructive to colonies in the West and extreme Northwest. We learned of its active operations in and about Portland, Oregon. We have had considerable correspondence with Mr. E. G. Ladd, of the Portland Seed Co., who observes, among other things, that weather conditions are an important factor, and that some colonies are more immune than others to the ravages of the disease. In answer to a recent letter in reply to one from us Mr. Ladd makes some observations concerning *Nosema apis*, or bee paralysis, or both, that are worth placing before the public. He writes:

Mr. Root:—Your conclusion that the bees in some colonies were affected more than the bees in others admits of no argument; neither does the question of weather conditions being responsible for it, as undoubtedly the trouble disappears when good weather conditions prevail. Whether the sick bees recover, we are not prepared to say, but believe not. I am inclined to think affected bees disappear and die.

Sulphur is one of the best known fungicides, and colonies treated with sulphur were cured or the trouble was checked; but in no instance was a colony saved that was treated with sulphur. Although apparently cured, they dwindled away. The application of sulphur killed the brood, and the bees were a sickly lot, and supposedly became discouraged and quit trying.

My garden record this summer shows potatoes and tomatoes blighting badly. They were sprayed with Bordeaux, but there was not sufficient to go

around, and part of them were not sprayed. Weather conditions turned warm and bright, and immediately the blight was checked, and the unsprayed lot gave as fine a crop as ever grew, and no difference was discernible between the sprayed and the unsprayed.

I find by the bee record that the date of improvement in garden corresponded with date of improvement in bees; but no bee was ever, as far as I know, seen on a potato or tomato, and I do not know if they visit the blossoms or not. The remarkable feature of the whole business is that locality apparently had nothing to do with it. Bees in the mountains, in high altitudes, were stricken, as were those in the valley. Bees protected from the weather were no more free than those exposed; but, as one good old lady remarked, "It just beats all how them bees do die."

Let us hope that there will be no recurrence, and that it will not be necessary for Dr. Phillips to visit any section looking for a cause of this affliction, and sincerely hope no more such reports will be offered by yours.

PORTLAND SEED CO.,

per Ladd.

Portland, Ore., Nov. 3.

We should like to get a list of symptoms from other parties who have suffered from this disease, for the purpose of comparison. One thing we wish to determine is whether it is the old bee paralysis, or nameless bee disease, of former days, or *Nosema Apis* of these latter days. If it is not paralysis, in what respect does it differ from it, and in what other respects is it similar? The more data we can get together just after an epidemic of this disease in this country, the better able we shall be to learn what it is.

In this connection we may add that some colonies or some strains, rather, are more immune to bee paralysis than others. This fact has been proved beyond question in Australia, where bee paralysis was so epidemic and destructive that the beekeepers there, as a last resort, selected colonies that were more immune than others. By a continual selection they finally secured strains that were entirely immune. Later on, Mr. R. E. Beuhne, of Tooberac, Australia, introduced some other strains of Italians from Europe and America. These immediately fell victims to bee paralysis. It was only after he had weeded out all traces of introduced strains that he was able to bring the disease under control. Mr. Beuhne is one of the most careful observers of bee life in the world.

Now, then, what we should like to determine is whether the bee paralysis of Australia and of the southern United States is the same as the *Nosema apis* of Great Britain. Is it the same as that disease or malady, whatever it is, that has been working such havoc in some western apiaries in the northwest part of the country, in and about Portland, Oregon? What relation has humidity or much rainfall to the recurrence and virulence of the disease?

Dr. C. C. Miller

STRAY STRAWS

Marengo, Ill.



"LIGHT honey does not impart any appreciable flavor," p. 799. Generally that's true—not always. I've had light honey (alfalfa) with so strong a flavor that I couldn't use it in my drink. [It would be more correct to say that light honey does not impart any strong flavor as a rule. All light honeys, with perhaps one or two exceptions, have a very delightful flavor. Generally speaking, mildness or strength of the flavor varies according to lightness or darkness of the honey.—Ed.]

"THE great trouble with the 'baits' is that they granulate almost immediately after they leave the producer's hands," p. 831. Why? Because of granules in the cells from the honey previously contained. If the baits are cleaned out in the fall *by the bees*, honey should not granulate in them more quickly than in other sections. [You are doubtless correct; but a great majority of those who use baits leave the honey in. Old honey will granulate more readily than new, and when the new honey is piled on the old it all granulates.—Ed.]

REPLYING to P. C. Chadwick, p. 837, I saw once, and only once, a laying worker in the act of flying. She was in a worker-cell, and her wings were pushed up about her neck in an uncomfortable way. I think that accounts for the fact that laying workers prefer queen-cells and drone-cells. As to whether only one laying worker or many, some years ago a German investigator dissected a number of workers in a laying-worker colony, and found eggs in a large proportion. [The obstruction of the wings also explains why very often laying-worker eggs are partly up from the bottom and on the sides of the cells.—Ed.]

ALUMINUM is recommended for hive-covers, p. 818. Wonder how it compares with zinc. After years of use my zinc covers seem as good as new—no paint, no rust. [The objection to aluminum would be the expense; but, say, do you know that both aluminum and zinc have more than doubled since the war began? When the new bee-supply catalog comes out an extra charge will have to be made for zinc covers as well as for any metal cover. Why not use paper? A good quality of roofing-paper, well painted, if carefully handled, will last nearly as long as zinc; but it will never do to pile hive-supers on paper covers.

G. M. DOOLITTLE says, p. 839, "from years of experimenting along that line I

cannot help thinking that much honey is lost in the attempt to stop prime swarming by destroying queen-cells." I have not merely experimented but practiced it to the fullest extent for very many years, friend Doolittle, so that my experience is probably much larger than yours, and I am confident that I have gained honey by it in some cases, and I doubt if I ever lost by it. My best yields are generally from those colonies that never start a queen-cell, and the next best from those that were prevented from swarming by having their cells killed. But the beginner who thinks he can prevent all swarming by killing cells is fooled. [This is an interesting piece of testimony. We desire to inquire whether others have had a similar experience. We should naturally incline toward the opinion of Dr. Miller, for the simple reason that some of the best comb-honey producers in the world practice cell-killing.—Ed.]

MR. EDITOR, you say, p. 835, "We fail to see yet why piping and quaking cannot be made by the same organs and in the same way." I never hinted that they couldn't. But that doesn't make them alike. When I say, "Tom shot John," I use the same organs and in the same way as when I say, "John shot Tom," but the two things are not the same. Compare these two lines:

— — — — —
I can hardly imagine that shutting a cell would make the first like the second. You say the noise is made by the wings. Ches-shire says, p. 157, "It is certain, also, that the wings are not concerned in its production, since queens clipped so vigorously that not a vestige of wing remains can be as noisy as others." He thinks it is "an effect of stridulation resembling that of the ant." He agrees with you that enclosure in a cell accounts for the difference. But he is apparently ignorant of the difference in length of tones, as he makes no mention of it. [It is hard to say what the effect of too close confinement would be upon the noise made by an organ located just below the base of the wings. While the wings may not make the noise, they invariably vibrate when the sound is made. Moses Quinby, in his original book which we are just now reprinting, says: "The queen was near the glass, appeared agitated, stopping occasionally to vibrate her wings, which was simultaneous with the piping, and seemed to make it."—Ed.]

J. E. Crane

SIFTINGS

Middlebury, Vt.



G. M. Doolittle tells us, page 796, Oct. 1, that after much experimenting he prefers to space frames $1\frac{1}{2}$ inches from center to center. The same here, and we have used them so for the last thirty or forty years.

There are some unpleasant things about inspection work; but it is by no means *all* unpleasant. There are some very pleasant things, and the making of some charming acquaintances and forming some lifelong friendships are not the least of them.

Mr. Chadwick calls attention on page 703, Sept. 1, to the wide difference in the price a certain consumer paid for peaches and what the producer received. There is evidently something wrong in our methods of the distribution of farm produce.

I began to wonder, as I looked over GLEANINGS for Oct. 1, whether there would be any extra copies to be had, and felt quite relieved when I found that several thousand extra had been printed. They will doubtless all be wanted, as well as a good deal of extra honey to go with them.

On pages 663 and 664, Aug. 15, Mr. Poudner gives some good advice about selling honey. Advertising in newspapers, he tells us, has always been a failure with him. Getting bottled goods into wholesale houses has been his best method for this class of goods. Same here.

The statement of Mr. T. Rayment, page 711, Sept. 1, in regard to the loss of pollen while working a certain variety of eucalyptus, reducing a strong colony to a mere nucleus, is of great value. The substitute of the white of an egg stirred into pulverized sugar, he tells us further, is the best substitute for natural pollen—a fact many of us are interested in knowing.

Nearly 175 recipes for the use of honey in the Oct. 1st issue, but one good one was left out, and I will give it now.

Ambrosia.—Take equal weights of choice butter and well-ripened, fine-grained, granulated alfalfa or clover honey (other honey of good quality will answer); place in a warm room to soften, then work them together until of even color. Mold to suit.

This makes one of the most delicious spreads that I know of for bread, warm biscuit, or griddle cakes.

The editor, page 697, Sept. 1, inquires whether "those large quadruple winter cases or tenement hives" have made good. I made a large winter case for twelve hives a few years ago, with heavy packing, but do not find any appreciable difference in wintering over those wintered in single double-walled and packed hives except that it makes more work.

Reference is made, page 741, Sept. 15, to the introduction of virgin queens. For many years we have practiced introducing nearly all our queens as virgins into full colonies. We have noticed a great difference in different seasons. Some years, not more than five or eight per cent, while in other years from ten to fifteen per cent fail to give an account of themselves.

Page 730, Sept. 1, T. J. Frost describes his hivestand, which is called "a new hivestand." It is a very good stand, but is not new, as I have had such a stand in use for more than forty years—yes, many of them; but after many years' experience I prefer a front entrance on the bottom-board where one may see at a glance what is going on or what is going in and out of the hive.

Louis Scholl tells us, page 659, that "Bulk comb honey and chunk honey are two different things." Please tell us once more just the difference and we will sit up and take notice. We made a lot of supers last winter to be filled by the bees so we could cut it out and sell in pails; but many of the combs are so filled with bee-bread, or have been occupied with brood, that we are extracting them.

A few weeks ago I was asked to visit a yard of bees some miles away. The proprietor feared he had foul brood. He said he had fifty colonies in the spring in very good condition, but they began to die in May, and he had only twenty left and had failed to secure more than a few cases of surplus honey, although the season had been very favorable. I found no foul brood, but learned that a good deal of spraying had been done in his immediate vicinity.

BEEKEEPING IN CALIFORNIA

P. C. Chadwick, Redlands, Cal.



On page 844, Oct. 15, is an article and illustration of my two friends, the bee and the spider. The spider was my friend before I knew the bee. At about the age of seven my father lived on the prairie in Douglas Co., Kansas, where the life of a small boy was made up principally of the things he found to interest him and fill out his time and employ his energy. I took up the study of the wasp, or, as we called them in those days, "mud-daubers." I did not know I was studying—I simply thought I was playing to fill in the time. But I followed the mud-daubers to the mud by the horse-trough and back to the barn to see where and how they used the mud. I became expert in following them, and solved the mystery of the feeding of the young larvæ.

After the long cells of mud were moulded and sufficiently dried, the wasp began the search for spiders with which to fill the cells, and, strange as it may seem, the spiders pictured on page 844 were the principal kind used by the wasp. Never a very large one nor a very small one, but only those of uniform size, were placed in the cell. When the cell was about half filled, the egg for the future wasp was laid on the body of one of the spiders. The cell is then filled with spiders, and the sealing is done. I formed a boyhood love for the spider, for he made food for my friend the wasp. So while the spider is getting a few of my friends, the bees, they are preyed upon by the wasp, and each in turn helps to work out the plans of a God-given nature, a part of the great plan of the life to fill the world with beauties, wonders, and interest to the fullest extent.

In the *Country Gentleman* of Sept. 18 I find an editorial headed thus: "A Disease to Beware of." It is so good and so full of simple truths that I give an outline of its contents, *substituting honey for words used therein*. It is a disease that attacks the grower and not the crop. It is spread through a germ, *Sellius itchii*. Now, in plain terms those two words mean itching to sell. The germ is not visible, even under the microscope, but is communicated from person to person in a prosperous farming neighborhood, or caught while talking to honey-buyers or reading the bee-papers.

Shortly after the infection the patient begins to show definite symptoms. First he has a general uneasiness about the size of the crop being harvested in his neighborhood, accompanied by a feeling that crops all over the country are too big. Then follows a depression, with a deep fear that even one hundred million people cannot eat, in the next eight or ten months, all the honey that is being harvested. About the third day after coming down, the patient develops a blind monomania. He is obsessed by the idea that he must sell his crop; must get ahead of his neighbors before they sell and leave him without a market; must get his honey off his hands somehow quickly; must sell! sell! sell! There is never going to be any tomorrow, so far as he can see, nor any next winter, nor any spring. He sees wagonloads, carloads, and trainloads of honey everywhere, and is persuaded that prices are permanently shattered. I will quote the remainder of the article verbatim.

"In this condition he has a pitiable weakness for going into some dark corner with a produce buyer, and, with trembling hands, counting whatever money the latter will give him in actual cash. Or, if he cannot sell to a produce buyer, he will ship on consignment to glutted markets where his crops, joining those of thousands of other growers suffering from the same disease, temporarily demoralizes values. No trustworthy cure for this disease has ever been found. Once attacked, the patient can only allow it to run its course. It ends when his crop has been sold below cost of production, bleeding of his pocketbook, bringing relief of mind. The real remedy is prevention, and the best treatment is mental rather than medical. During the season when there is danger, every grower should build up within himself confidence, assurance that the world will hold together until after harvest, that prices will strengthen when gluts caused by this disease have run their course, and that patience is as necessary in making a profit as any thing done in actually producing the crop!"

If this had been written of the conditions in the California honey market it would not have been—in fact, *could* not have been—any nearer the truth. The California honey market undergoes a violent attack through the producers annually; and if the disease could be cured we should all profit by it.

BEEKEEPING IN THE SOUTHWEST

Louis H. Scholl, New Braunfels, Texas.



CARING FOR EMPTY EXTRACTING COMBS IN THE SOUTH.

One of the problems with the beekeepers in the South is that of combating the ravages of the moth larvæ, which, if not carefully watched, may mean damaging results to the amount of many dollars in a very short time. They are the most serious enemies to empty combs; and even if they be left unprotected for only a few days their inroads may ruin the best of combs in short order.

Occasionally it becomes necessary to stack the supers containing the freshly extracted combs up near the honey-house before returning them to the outyards. Sometimes they remain here more than a week, and even longer if unfavorable weather and other circumstances delay the work. It is during these periods that the greater danger from their depredation lies. We have experienced some losses ourselves, as well as having seen some of the disastrous results of their work to other beekeepers.

Our remedy now, when we have a large number of these supers stacked up, is to set four stacks of them in a block, close together, about eight to ten feet high. On top of the stack, by means of a step-ladder, we set an empty shallow super into which we place two of the cheap heavy paper picnic plates, and pour into them a quantity of bisulphide of carbon, or "high life." Then we lay a hive-cover on top of each stack of supers, letting them fit as closely as possible, and over the whole block of the four stacks we then place snugly a large heavy duck wagon-sheet or tarpaulin. This reaches nearly to the bottom of the stacks if the supers are piled very high; but we have found the work of the gas just as effective as when the supers are entirely covered. The propolis and wax on the edges of the supers, with the addition of the weight of the supers themselves, tend to seal the hive intersections completely enough so that it is not necessary to paste paper over these as has been often suggested. Our idea of treating these supers is to accomplish the results with as little labor and expense as possible, and we have found the method quite satisfactory. The additional protection of the tarpaulin prevents the air drafts from disturbing the gas fumes within.

SELLING A LARGE CROP OF HONEY.

"Producing a crop of honey is one thing, but selling it is quite another thing," is an old saying that has been often repeated. We have many good beekeepers who are very poor sellers; and unless somebody else sold their honey for them they would have to go out of the producing business.

OUR NEW STATE ENTOMOLOGIST.

The beekeepers of Texas are well aware that I have always been deeply interested in the welfare of our worthy industry. Because of this interest I was prompted to urge the co-operation of the Texas beekeepers in the Sept. 15th issue of GLEANINGS, in the foul-brood-eradication work in this state.

Since this article appeared I have received a very encouraging letter from Director Bonnie Youngblood, of the Texas Experiment Station, assuring us his full support in the work, and the proper expenditure of the appropriation we were so fortunate as to get. Also Prof. F. B. Paddock, our new State Entomologist, has emphasized my recent request for co-operation in a letter which follows:

Hon. Louis H. Scholl:—More than likely you are aware by this time of the appointment of Director Youngblood in regard to Mr. Newell's successor as State Entomologist. In that capacity I am writing you at this time to thank you for the article which appeared in the Sept. 15th issue of GLEANINGS. You have said much of solid truth in that article.

Director Youngblood and myself are very anxious that the beekeepers of the state should get the benefits of the foul-brood law and the appropriations made to support it, both of which have been secured very largely through their efforts and interest. Personally I feel it my duty to give the beekeepers everything possible under the conditions. You are well aware of the fact that we cannot properly conduct the foul-brood-eradication work without the co-operation of the beekeepers of the state. We hope that every beekeeper will follow your suggestions to work hand in hand with the State Entomologist, for, as you say, in this way only can great good come from the work which is now started. We also hope that the beekeepers will correspond with this office in regard to foul-brood-eradication work and the beekeeping problems of the state. Truly we have the chance of a lifetime to do some good work along this line. I certainly trust that the beekeepers will feel satisfied with the results which we hope to obtain in the foul-brood-eradication work in the next two years with a liberal appropriation. I shall ask your hearty co-operation with this office in the work which we are trying to do. By working together we can accomplish much more than by working apart. I certainly trust that your services will be extended to this office in the future as they were in the past.

F. B. PADDOCK,
State Entomologist.

College Station, Tex., Oct. 15.

CONVERSATIONS WITH DOOLITTLE

At Borodino, New York.



GATHERING POLLEN; POINTED
QUEEN-CELLS.

"Will you tell us why bees gather pollen more plentifully in the early part of the day than later?"

I have heard it said that pollen is always fresh and pliable in the early morning hours; and as the day advances, the sun getting higher, the pollen gets too dry to gather easily, and so the work is given up. Another reason which has been given is that the flowers secrete nectar more freely in the latter part of the day, so in their eagerness to secure this nectar they give up or forget all about the pollen till another morning. Whatever of truth there may be in these reasons given, I suspect that in many varieties of flowers like corn, sorrel, narrow-leafed plantain, etc., the pollen is either gathered by the bees or falls off with each rising breeze to do its proper work early in the day, so that the bees have none to gather later.

It may be that, when honey is abundant, carriers of pollen are scarce; but is it not true that when the hard maple and white clover are yielding nectar abundantly pollen is also gathered throughout the whole day? In times when the hard maple blossoms freely I have seen the lengthening cells along the tops of the combs sparkling with nectar, and at the same time the combs next the outside of the brood-nest may be so packed with pollen that the queen has to go clear around to the opposite side of the comb to get a chance to lay her eggs for the expansion of the brood into the next comb. Then with the clover we have pollen and honey gathered at the same time, to the detriment of many a section of honey. Some claim that bees do not gather pollen from clover, as they never see bees with loads of pollen (in clover bloom) before the bees begin to secure nectar, it being a well-established fact that prior to 7:30 A.M. very little nectar is gathered from any of the clovers, on account of the nectar being too thin from the morning dew for paying work. Such a claim is based on careless observation, as clover pollen is not as readily seen as most other kinds, it being a darkish brown. Clover pollen seems to be the only pollen which is covered with honey, and the honey sealed over, thus perfectly preserving it for early spring brooding.

"I notice that some queen-cells during the swarming season are more pointed than others. Which are better—the pointed ones or those round and smooth on the end?"

I cannot see that the wax put on the cell at the end has anything to do with the value of the inmate of the cell. I am inclined to think that the shape of the cell when first finished is due to the peculiarity of the bees building the cells. The real length of the cell is determined by the cocoon spun by the royal occupant. I have never noticed any difference in the shape of the points of queen-cells internally; but often, after cells are capped, the bees decorate the free end with a point of wax so as to make it look much longer and sharper. These cells will all be nicely rounded off in a few days, as this wax is generally carefully removed before cells are ready to hatch.

"I see that you have 'started something' by telling how a queen pipes. But I fear some of the discussion is not orthodox."

Sorry our correspondent does not specify what he considers unorthodox. Dr. Miller, p. 835, quotes Baron Berlepsch, who would have us understand all queens quahk at their maturity. This is certainly a mistake, as all know who have seen a mature queen emerging from her cell. Such queens are as white, weak, and fuzzy, as are the mature workers when they come out of their cells. It is only as either of these partake of food that they begin to assert themselves. I am led to believe that no queen ever piped or quahked in less time than 18 hours after she had taken food; and the first of any batch of queens emerging comes out white and fuzzy, as I have often proven by close observation during more than forty years.

The editor, p. 790, and p. 835, would make a poor showing, only that he tells us that he does not know very much about this whole proposition. He tells us about quahking queens having "less air;" and refers to the waxen cells as being nearly air-tight, while all close observers know that no queen ever quahks until she has made an incision through the capping of her cell of sufficient extent to thrust her tongue through and partake of food given her by bees outside. Here is where Arthur C. Miller fell down in his theory that queens are never fed only as they lay hold of the workers and demand food by force. As Dr. Miller says, the piping queen gives the challenge, and then all the queens in their cells which have been fed by the workers for eighteen hours or more go to quahking. A quahking queen is held in the cell by a few bees holding the cell-cover on immediately on her maturity, and the cover is never so held except when another queen has her liberty in the hive.

GENERAL CORRESPONDENCE

EIGHT OR TEN FRAME HIVES

BY E. F. ATWATER

There have been some differences of opinion as to the proper inside widths of our "standard" hives. As I have done a large part of the frame manipulation of an average of 1000 colonies, from one to six stories high, for a number of years, perhaps my opinion may have some weight.

C. P. Dadant says, "Properly made hives should have the same space, per frame, whether they are twelve-frame hives or six-frame." Dr. Miller says, "Aye, they should have; but they don't have—at least eight-frame and ten-frame hives don't."

The inside width of the standard eight-frame hive is $12\frac{1}{8}$ inches, or $1\frac{1}{8}$ inches more than is occupied by the eight self-spacing frames (which occupy 11 inches). The standard ten-frame hive is $14\frac{1}{4}$ inches wide inside, though one manufacturer has adopted a new width of $14\frac{1}{2}$ inches.

Now, as the eight-frame hive is admittedly going out, there is no need to correct its shortcomings. As the eight-frame hive has room for eight frames, and a thin division-board (not over $\frac{3}{8}$ inch thick), it is seriously faulty. That flimsy, worthless follower is one of the worst nuisances ever put in a hive.

If propolis is at all plentiful the division-board is often broken when being removed, and sooner or later is left out entirely, and the self-spacing feature of the frames virtually destroyed. If tightly crowded together, comb will be built at the sides, as there is too much space there.

The great mistake in the first place was in not making a nine-frame hive. Then the advocate of an eight-frame brood-nest could use eight frames and a heavy dummy, to take the place of the ninth frame. Upon the removal of the dummy there would be ample room to manipulate the frames. The heavy dummy would last for years—nothing flimsy about it.

For several years I had 200 hives with sides only $\frac{5}{8}$ inch thick, which gave a nine-frame space inside, outside width 14 inches. These tier to good advantage with all eight-frame equipment, and contain eight frames and a heavy dummy. They were far more satisfactory for brood-nests than the usual eight-frame inside width with the toy division-board, and had the additional advantage of giving a little more room for honey,

when used as extracting-supers. Sometimes we used nine frames in the brood-nest.

If such nine-frame hive had been adopted years ago, today it might easily be an almost universal standard, as the ten-frame is not enough larger to justify the existence of two sizes. The nine-frame hive is extensively used in Utah and California.

But the tide has set in so strongly to the ten-frame hive, and tens of thousands of them are in use, of a width of $14\frac{1}{4}$ inside, 16 outside. Anything wider makes endless confusion for those who have telescope lids. Therefore I am confident that it is a serious mistake to make the ten-frame hive $16\frac{1}{4}$ width outside.

No one with much experience with the Hoffman frame will contend that the $16\frac{1}{4}$ width gives room for the use of even the hopelessly frail division-board beside the frames. True, at times the removal of the first Hoffman frame is quite difficult, with the standard width, outside, of 16 inches or $14\frac{1}{4}$ inside.

If a little more space is desirable, better by far to continue the old sixteen-inch standard width, outside, and make the sides of 13-16, or even $\frac{3}{4}$ inch lumber, to gain $\frac{1}{8}$ or $\frac{1}{4}$ inch more inside width. I have thousands of hive sides $\frac{3}{4}$ to 13-16 inch thick, and there is no appreciable difference in strength or durability, compared with the full $\frac{7}{8}$ thickness.

This change should meet the approval of all supply dealers, as even now several firms have had to give up the use of full $\frac{7}{8}$ -inch lumber, as most mills do not saw lumber that can be dressed on two sides, and be over 13-16 inch thick.

If the advocates of the eight-frame hives could be compelled for five years to use the ten-frame size, with nine frames and a heavy dummy, there would not thereafter be much call for eight-frame hives. The ten-frame hive with nine frames and a heavy dummy, or division-board, is a splendid comb-honey hive, and, if you have a good ten-frame strain of bees you can use the full ten-frame brood-nest.

For many years I was an advocate of the eight-frame hive, but using many of the tens all along. A few years ago experience proved that anything that could be done with the small hive could be as well or

better accomplished with the ten-frame hive. We now have far more of the ten-frame size—several yards contain no other.

In conclusion I want to urge that manufacturers do not change the old standard

outside width of 16 inches for the ten-frame hive; but if $\frac{1}{8}$ to $\frac{1}{4}$ inch more inside width is needed, make the hive sides of 13-16 or $\frac{3}{4}$ inch lumber.

Meridian, Idaho.

A WINTER-CASE HOLDING A WHOLE ROW OF HIVES

BY R. C. GIFFORD

Recently a number of the "big fellows" of the beekeeping world have been advocating the use of square winter-cases which protect four colonies. In these cases two of the colonies have to face either east or south, and the other two north or west. As one of the very "little fellows" of the beekeeping world I can't help feeling that this plan would be anything but successful in the hands of the average folks like myself.

In this locality there is a lot of damp cold wind during the winter. We use the expression "It chills you to the backbone" to describe it. I'm afraid if my bees had to sit

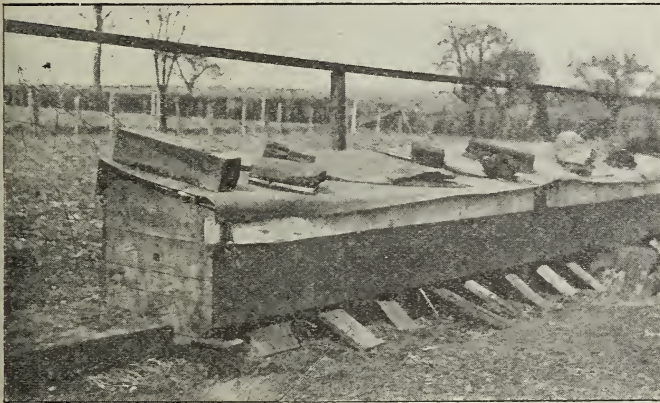
mended by several. It has always given perfect satisfaction. It is also much cheaper because any kind of boards can be used for the top and sides. Of course the two ends for the case are built for that purpose, and nailed securely, because the long boards are all fastened to them. The ends I use are 28 inches wide by 23 high, and have a three-inch slope toward the front.

The tar-paper cover is held in place along the north side and corners of the south side by nails driven through long narrow boards. Weights hold it securely on the top. With this method, if the paper is put on and taken off during the middle of the day while it is soft from the sun's rays, it can be kept in good condition for several years. Then, too, the paper stays where it belongs. The first year, I nailed the paper on securely with the nails which come with it. In the middle of the winter we had a severe blizzard, and the wind managed to get under that stuff and tear it all to pieces. Of course it had to be replaced immediately, so the entire family had to wade out among the snowdrifts and literally sit on the paper while I fastened it down with weights and nails driven through lath.

WINTER STORES.

On the first frosty morning after the honey-flow is over, the colonies are weighed. Two people do the work because it is too heavy and awkward for one. The colonies are weighed, one at a time, on platform scales which are trundled wherever desired, on a wheelbarrow. Each colony has to weigh 35 pounds after the weight of the hive-body, bottom-board, and cover are deducted. If it doesn't, sugar syrup is fed.

When this work is done on a cool morning the bees are not disturbed so much, and



The long case is cheap, and has always given perfect satisfaction.

with their open entrances toward the north or west all winter this wind would chill them to their backbones, and I should have nothing but some frames and hives when spring came.

Another thing to be considered is the peace and comfort of the beekeeper. I think the majority of beekeepers have bees because they really like them. Well, imagine going to your warm comfortable bed some night with half of your hives facing the north and west, when the wind is moaning around the house and even driving the snow through the tiny cracks around your bedroom window. You would not enjoy the night's rest, would you?

I have always used the long case recom-

they do not disturb us so much. To help along still more, so they won't disturb us at all, we lay a damp cloth across the entrance just before we set the colony on the scales, and leave it there several minutes after the colony has been returned to the

stand. If four damp cloths are used, the hives can be handled as fast as two people can work, and the bees won't be likely to raise a rumpus.

North East, Md.

[See editorial comment elsewhere.—Ed.]

THE VALUE OF ITALIAN BEES IN FIGHTING EUROPEAN FOUL BROOD

BY H. HARLEY SELWYN

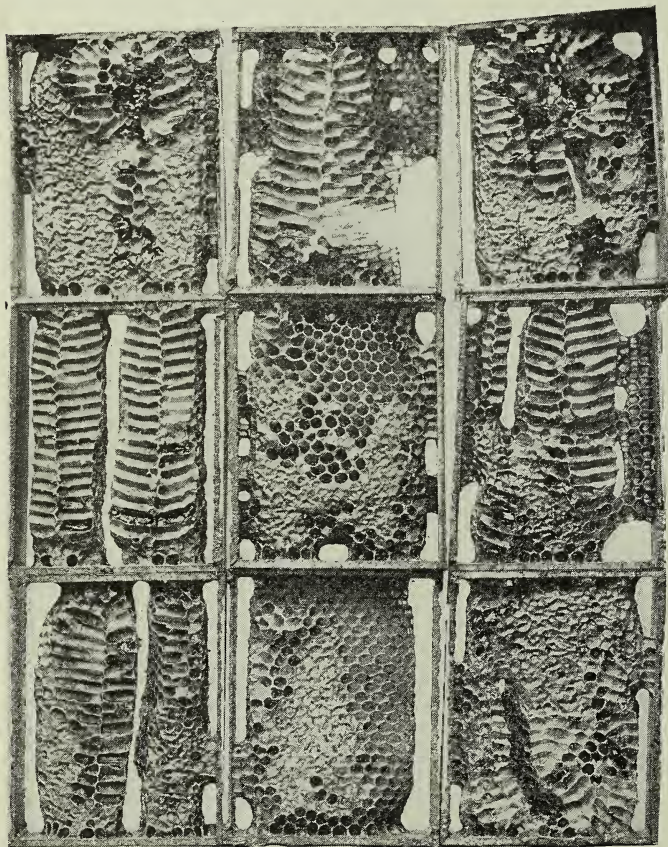
It seems to me our veteran Canadian beekeeper, Mr. Holtermann, needs some cheering up on the matter of European foul brood (see GLEANINGS, page 707, Sept. 1). It does sound odd to me to hear of one who has been so long in the business meeting only now with this disease. My bees and European foul brood have grown up together, and I feel I know its vagaries so well it causes me little more worry than an absconding swarm in August. In fact, I

have such peace of mind in regard to it now that I hope to lighten our good friend of this incubus which apparently has come to burden his mind.

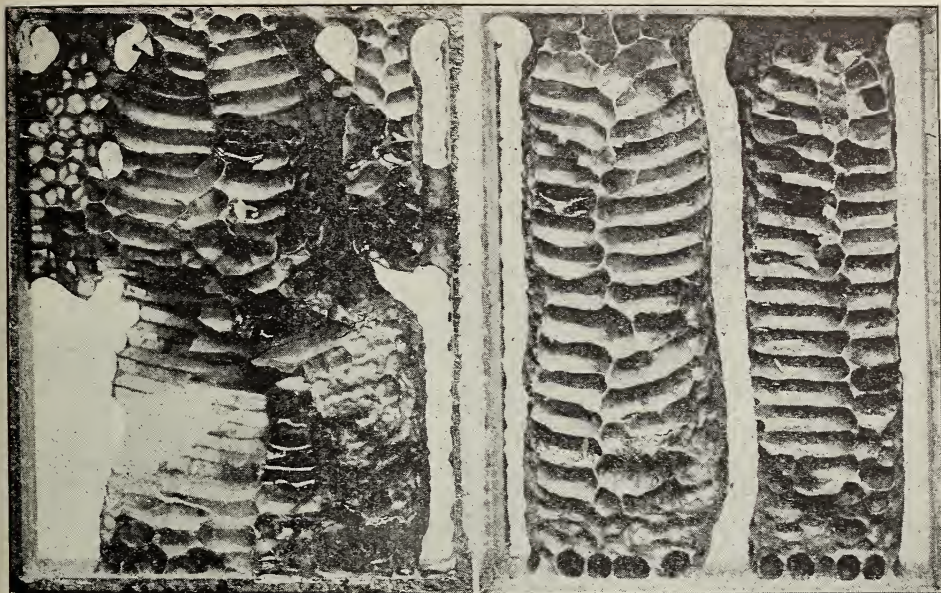
To sum the whole matter up in a nutshell, I believe in and practice the three words, "Keep Italian bees." They will look after European foul brood, and if Mr. Holtermann or any one else does the same his troubles will shortly be at an end.

While on the topic of European foul brood there are some observations I should like to make. These are based on experience, and may be useful to those having yet to encounter the disease. In the first place, let me say that I would have Italianized before the disease was brought to the yard had I known then what I know now. The penalty I paid was to lose a crop of honey, render down over 1600 combs, and work day and night to save any bees at all.

Notwithstanding the fact that Italians can rise up in the midst of European foul brood and overcome it, I believe that they must suffer first (some worse than others) before becoming immune to other ravages. This question of immunity should, in my opinion, receive more consideration. Disease comes to a man's yard. He Italianizes,



Sections placed in a super without starters. Note the different construction of comb in each section, and imagine the trouble in removing them from the super. Photographed by Charles Y. Hake.



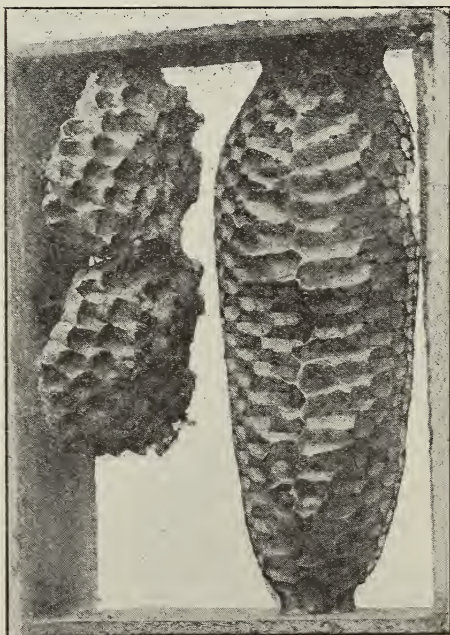
Showing more in detail how the bees worked without starters. Photographed by Hake.

and works hard for several years treating disease by shaking, requeening, and feeding. After a time he finds the colonies are all quite healthy. Such conditions hold good as long as he keeps his pure-bred Italian queens heading each colony.

It is to be understood that he has done his own breeding and selecting from those hives surmounting disease most rapidly. Then comes the day when a very dark cross dominates a colony. At the first honey dearth of consequence this hive shows diseased larvæ badly. Where did the disease come from? That is what is puzzling many beekeepers today. At any rate the point I wish to make is this: Italians must become immune; and as long as that strain continues in a yard, everything goes well. To carry the point further, I would also state disease might be *prevented* in many another man's yard by the introduction and use of such immune strains of bees. In fact, I have seen it done.

Furthermore, there is the matter of the spread of European foul brood through shipment of colonies of bees to outside points. I should like to inquire whether the government is going to be able to control this spread of disease when Italian colonies can harbor the disease from season to season without its appearance until the chance comes for a reversion to the black strain of bee. It does not seem to me that any amount of quarantining will bring it to

light under such conditions. In my own yard, for instance, I feel I am safe in offering to have the best foul-brood expert in Canada come and examine every hive for



A wasp-nest beside a honeycomb in the section. Photographed by Hake.

disease without a chance of his finding anything wrong. Yet I know the disease is present.

Last spring, during my absence for a few days, Mr. P. H. Selwyn put out some dozen supers which had been stored away since disease first hit this district. They contained dried-up larvæ and honey—the very best of materials to distribute disease wholesale. These supers were put on strong colonies to receive the surplus, then beginning to come in. At that time my hives were, to all appearances, clean and strong. Had this taken place in a yard of blacks or Italians that never had encountered the disease, I have a fairly good idea what would have followed. What do you suppose did

happen? The immunity theory worked as I have outlined, and nothing ever came of the unintentional experiment.

There is work here for investigation by the government officials in connection with apiculture. It is no joke for the man dependent on his bread and butter from the bees to experiment with European foul brood.

Mr. Sladen, Experimental Farm, Ottawa, did, I believe, try something of this sort with the apiary in his charge, but I have not learned the outcome of it. I know he wished to secure from me a rattling good case of disease (hive and all) to try to re-infect his bees.

Kirk's Ferry, Quebec.

EUROPEAN FOUL BROOD NOT A CALAMITY

BY EARL SEAMANS

I consider European foul brood a blessing. We have had it in Wyoming County for the past eight or ten years, and every year I have had some of it in my own yard, and in no year have I failed to secure a crop of honey. This season I found five colonies affected with it in a yard of fifty-eight colonies.

European foul brood has compelled me to purchase several Italian queens each year to replace diseased queens. This has increased the value of my stock, which has proved to be one blessing. Then the disease has put a number of slip-shod beekeepers out of business. That is another blessing. I have never lost or destroyed a single comb on account of this disease. When it first appeared around here I sent for the "Alexander Book." That book was worth its weight in gold to me.

A hive containing European foul brood should be labeled "Diseased queen," and treated accordingly. The queen, and not the bees, is the source of trouble. I have placed as many as three upper stories filled with foul brood on top of a healthy colony with a sheet of queen-excluding zinc under them to prevent the queen going up, and I have never had the disease carried from the top down into the bottom.

This summer I caged a queen from a diseased colony about a week, and then put her and the bees on clean combs. In one month that colony was as bad as ever, which proves that the queen carries the disease. Shaking the bees into a hive filled with starters or full sheets of foundation will do no good unless the queen that was in the diseased colony is killed.

Ten years ago my brother had several

hundred colonies in this section when he found European foul brood. He removed all the brood and honey and destroyed it; then he charred the hive and put the bees and queen back on full sheets of foundation. Did it do any good? No. The queen was diseased, and carried the disease into the clean hive. He now has less than fifty colonies.

Kill the diseased queen; lift out all the frames of bees, brood, and honey; put a frame of clean brood and some clean combs in the hive, and then shake the bees in front of the hive, giving them a good Italian queen. If during a honey-flow the queen can be run in with the bees, at other times she should be introduced by the cage method. The frames containing the foul brood can be placed on top over a sheet of perforated zinc, or may be put over a sheet of perforated zinc on another colony without any danger of the disease being carried below.

This summer I tried to run in a valuable queen with the bees at the entrance. They killed the attendant bees and balled the queen. I threw the ball of bees and queen into a pail of lukewarm water. When they liberated her I put her back into the cage and put a number of newly hatched bees from the same colony into the cage with her. Then I placed the cage on top of the frames and let the bees "eat her out." They accepted her all right.

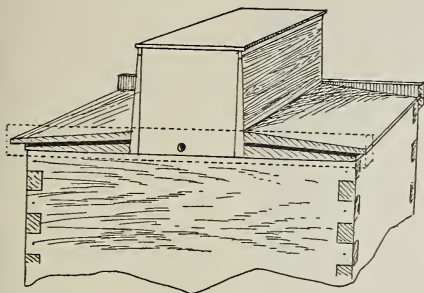
I have secured a good crop of clover and buckwheat honey. On the first day of September one of my hives sent out a very large prime swarm, which is the latest date I ever had one.

Factoryville, Pa.

A NEW WRINKLE IN HIVE-COVERS

BY E. M. CROW

The accompanying illustration shows a device which I am using with a great deal of satisfaction in my beeyard. For want of a better name it might be called a combination hive-cover and nucleus-box.



The box is made of two pieces of $5\frac{1}{2}$ -inch bevel siding 20 inches long ($\frac{1}{2}$ -inch stuff of even thickness would be better), and two end blocks $\frac{7}{8} \times 5 \times 5\frac{5}{8}$ inches deep. It will hold three shallow extracting-frames. Projecting from the lower edge of the box on either side is a double cover made of two pieces of bevel siding 20 inches long, held apart by three $\frac{3}{8}$ -inch cleats. This makes a

cover just right for a ten-frame hive. A $\frac{7}{8}$ -inch board, 6 inches wide and 20 long, makes a good cover for the nucleus-box part.

The uses to which this appliance may be put are varied. In the first place it is a No. 1 hive-cover for hot or cold weather; and if kept painted it will last as long as any other cover. Should you wish to requeen a colony, put a frame of brood and bees with a ripe cell in the box over the doomed queen, with a wire cloth between, and the flight-hole open to the rear. When the new queen has mated, and is laying, quietly remove the old queen and the wire cloth, and there you are with no time lost.

Do you wish to feed a colony? You have but to place four pepper-box feeders in the box directly on the brood-frames, and the work is done. Queen-rearing can be carried on in almost any kind of weather by the use of these boxes over a strong colony with wire cloth between.

The use of the bevel siding for the roof part gives a good pitch to the upper surface while the under side is held level by end cleats.

De Soto, Mo.

THE ISLE OF WIGHT DISEASE IN WASHINGTON

BY T. DWIGHT WHITMAN

There was practically no crop of honey locally, and considerable loss of bees from what I consider a form of the disease known as Isle of Wight disease. Either from this disease or the fumes from our local smelter, which was treating more copper than usual, and which killed the peas and beans, and showed on the foliage of my trees, I lost eighteen out of twenty stands. The two that survived were helped out with brood from Puyallup. I used the uncapped honey from the hives that died to see if it had any injurious effect on the bees. Apparently it did not. Only the adult bees were affected, the loss of brood being from chilling. The colonies lost strength so rapidly that they could not take care of the brood they had. The queen laid to the last, but with fewer and fewer eggs.

Of the two hives that I have left, one still shows symptoms of the disease. The other seems to have got entirely rid of it. Both were treated exactly alike, and both fed

with the uncapped honey from the stands which died.

I am watching them closely to see what the outcome will be. The bees were working and carrying in pollen in both hives today. Goldenrod and catnip are in bloom.

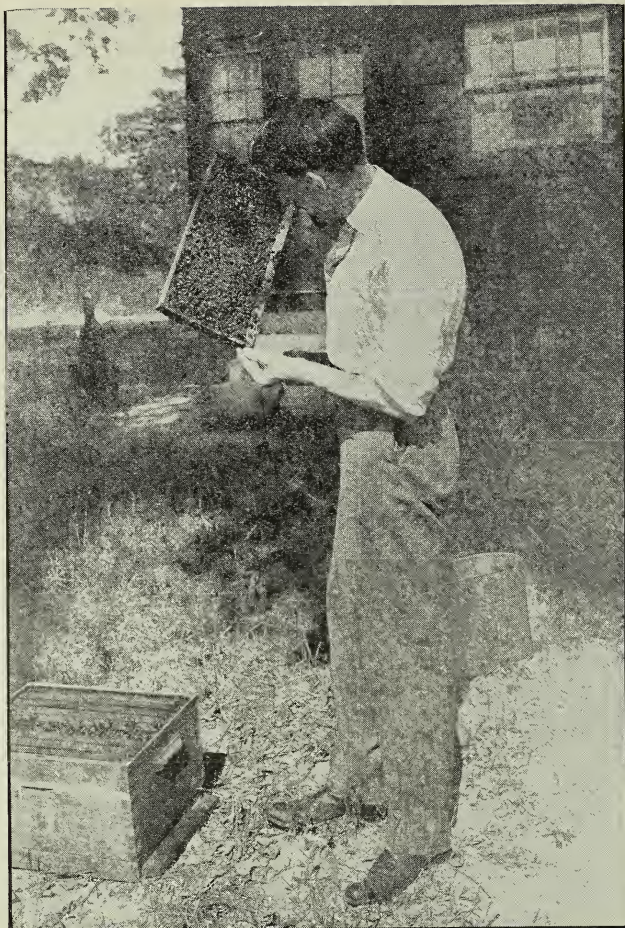
The disease, whatever it was, seemed to affect old and young adult bees except the drones, which were not affected. In the early morning the ground in front of the hives would be covered with bees seemingly unable to fly. If the sun came out and warmed them up, a large proportion would fly away, but few would return to the hive. Their bodies would be distended. When squeezed, some appeared to be empty, others full of a white watery matter, others as when they have dysentery. Dead bees had protruding tongues. There was no trembling, nor motions of the wings. They gathered in bunches on a rock or piece of wood in front of the hive, and seemed without ambition to do anything.

Tacoma, Wash.

TREATING AMERICAN FOUL BROOD

"A Movie Scenario"

BY BENJAMIN WALLACE
DOUGLASS



Each frame in the hive should be carefully inspected for foul brood.

If the frame is held upside down it is very easy to detect the presence of the American foul-brood "scales" on the side of the cells.



When foul brood has been found, the beekeeper should at once make preparations to treat the disease.

A new hive is provided with starters of foundation. A wash-boiler of water is also near at hand.

The old hive is set at one side and the new hive is placed on the old hive-stand.

The bees are now ready to be brushed into the new hive. They should not be shaken, as to do so will also shake some of the infected honey in with them.



The bees are now brushed into the new hive. The best brush is one made of a wisp of grass or weeds. After use it can be burned.



As soon as the bees have been removed from the diseased comb, the entire comb should be placed in a wash-boiler containing water. This prevents the bees from gathering on the old comb again, and prevents robbing.

Trevlac, Ind.



RANDOM NOTES ON BEE BOTANY

The Largest Flower Cluster in the World

BY JOHN H. LOVELL

The Talipot palm grows for thirty or more years, until it reaches the height of sixty feet without blooming once. Its home is in the damp forests of Ceylon. Then from its apex there springs an enormous cluster of flowers 40 feet long by 35 feet wide, composed of innumerable blossoms. The flowering period lasts for about four weeks. As soon as the fruit matures the whole tree dies like the century plant. It blooms only once.

FOLIAGE AS A SOURCE OF NECTAR.

The leaves of the partridge pea and of cotton are the source of a large quantity of nectar. When the atmospheric conditions are just right a bee can often obtain a

load from one or two glands. Phillips states that majagua, a common plant in Porto Rico, has extra-floral nectaries on the leaves, and that he has seen ants working on them. The leaves of many of our native herbs and trees also possess nectaries, as the vetches, castor-oil bean, the brambles, cherries and plum, poplars and maples; but, unfortunately, they secrete very little nectar. But could we not obtain by selection varieties that would yield nectar abundantly? If this could be done the possibilities can hardly be imagined. Various ferns, which are, of course, without flowers, also have nectaries.

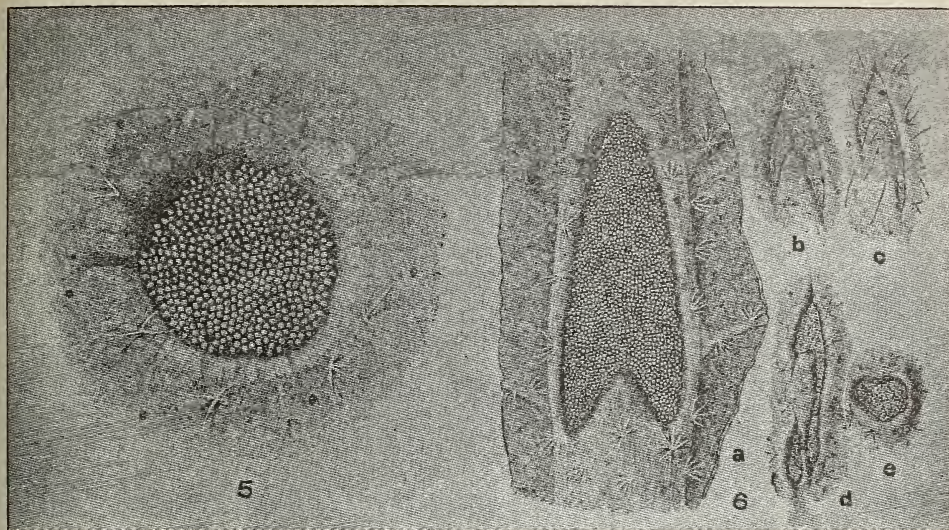
THE USEFUL BLUEGUM.

In the delta of the Oriuoco River there grows the mauritia palm-tree, on which a whole tribe of Indians depends for existence. They dwell among its branches, and it affords them fuel, food, wine, cloth, twine, etc. It is well called the "tree of life."

The bluegum (*Eucalyptus globulus*), now largely planted in California, has almost as many uses. The very hard close-grained wood is valuable for fuel, furniture, telegraph-poles, railways, vehicles, fence-posts, wood paving, etc. The flowers are a source of much honey; the leaves and twigs yield a medicinal oil, and the bark may prove of importance in tanning and paper-making. The trees form excellent wind-breaks, destroy malaria, drain damp soil, and are a handsome landscape tree. It is the fastest-growing tree in the world, and one of the tallest. Photographs of the flow-



The Talipot palm (*Corypha umbraculata*) in bloom. The largest flower-cluster in the world, 40 feet tall by 35 feet wide. (From a photograph by Miss Seidmore.)



Leaf nectaries of cotton. 5. Outer involucre gland. 6, a, b, c, d, e, nectaries on leaves.
From Bulletin 131, Bureau of Plant Industry.)

ers and fruit of many species of eucalyptus are given in Bulletin 225, Agr. Exp. Station, Berkeley, Cal. The picture of the

flower and nut-like fruits of the bluegum is natural size.

Waldoboro, Maine.

BEES IN THE HONEY-HOUSE

BY FRANK L. POLLOCK

Bee-escapes on the honey-house windows at extracting time have proved a two-edged sword with me. The escaping bees return and hover about the screen windows as long as they live, and sometimes succeed in finding a way in through some tiny unsuspected hole. I was forced to adopt the Townsend method of closing the escapes till after extracting, and then carrying out a big cluster of bees all at once. But it is annoying to have the honey-house full of bees while extracting is going on, crawling over the floor, getting into the honey, and causing innumerable stings, especially to the uncapper.

I have hit upon the following device, which turned out very useful. In each upper corner of the screen window is a cone escape, with a pretty large opening. This does not lead into the open air at all, but into a box about a foot square, hung on the outside of the honey-house by two hooks. This box has two sides of wire cloth, and one of the wooden sides is on hinges, and can be opened out like a door.

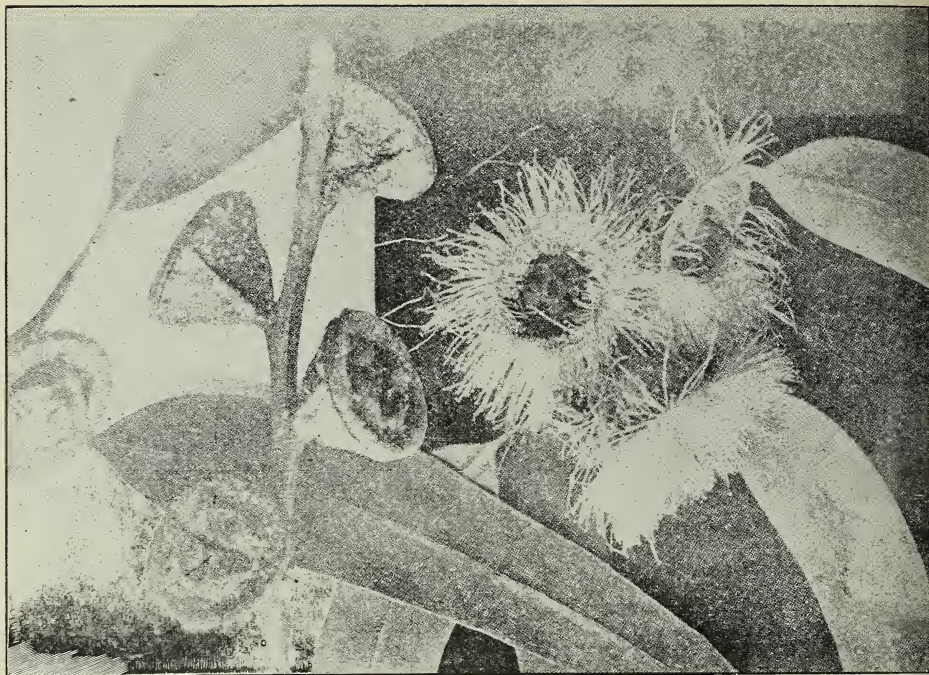
The large cone escapes keep the window well clear of bees all the time, and they go out into this box and no further. A few

may possibly come back. At the end of the day the box may be unhooked, carried into the yard, and the bees dumped out, without any danger of their locating the screen window.

I was forced to this expedient by my bees developing a peculiarly ingenious form of robbing this summer. The bees that were carried into the honey-house on the combs presently seemed to content themselves pretty well, and I discovered that they were doing a long-office business by carrying honey to the screen window and passing it through to the bees on the outside. Having unloaded in this way they went back to the uncapping-box for more.

I sat and watched them at this for some time, and I observed that almost every bee that took wing loaded from the cappings ejected a fine spray of fluid before reaching the window. This has often been observed when bees were taking thin nectar, and is supposed to be the superfluous water; but this was very thick well-ripened honey. Where did that surplus water come from?

Incidentally I would venture to say that I think the plain wire cone is the best form of bee-escape yet devised. An escape-board



Flower and fruit of the bluegum (*Eucalyptus globulus*). Natural size. (From Bulletin Agr. Exp. Sta., Cal.)

with an opening two or three inches in diameter, and a single flat cone on the other side, will clear a super considerably quicker than any other. It is unnecessary to have several cones within each other, as in the Lareese escape. A single triangle with one of the corners open wide enough for a drone to pass is all that is needed. I have watched bees trying to pass out the Porter

escape. They do not like to force the springs aside, and will hesitate and back away, causing a great deal of delay, while they go instantly through the open cone. It is true a few bees may pass back through the cone; but a dozen odd bees in the super are of no consequence, and I have never found more than that.

Stouffville, Ont., Can.

NOTES FROM THE APIARY; A NEW METHOD FOR SECTION HONEY

BY JOSEPH GRAY

Any method of comb-honey production that will enable the extracting man to find new outlets for his honey at small initial expense is worthy of trial.

My supers were filled with six extracting-combs and one section frame, the latter occupying the center of the super. The section-frame was made of plain $1\frac{1}{2}$ -inch material, and held eight plain sections $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{1}{2}$. The sections, when fitted with full sheets of foundation and separators, were made from castaway fruit-boxes.

The only parts cut by machine were the 3-16-inch strips for the edge of the big separator. The two separators were held

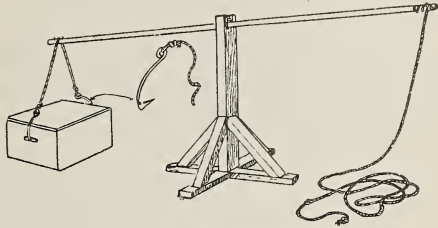
in place at the bottom with straps of tin so that, when set in, the section-frame was properly spaced. The advantage of this method is that the frame only is spaced, not each individual section, and no new appliance is needed in an extracting apiary except the frame and separators. This leaves the apiarist free to take both comb and extracted honey from his strongest colonies.

CONDITIONING HONEY.

As we use a tank of 6000 lbs. capacity, I wanted a reliable way to leave my honey in as good condition as possible when filling cans. I found it by having a tank within a

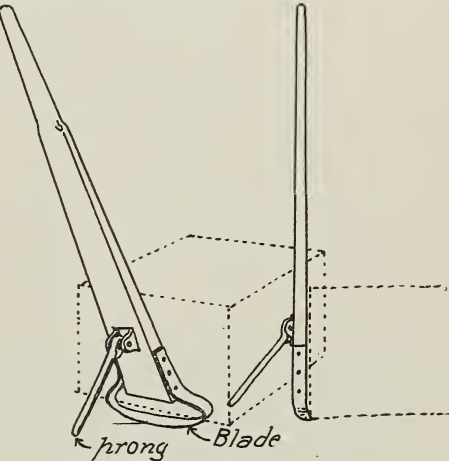
tank, and a full-length wire-cloth screen within the inner tank. The honey is siphoned from the inner tank to the outer

crack of the cover and super of freshly closed hives. Dry soil is a good temporary entrance-closer.



HONEY-LOADER.

Having a considerable amount of honey to load, the task was lightened by a mechanical loader, an upright carrying a cross-beam at one end, with rope and grab-hook, and at the other end a trail-rope. This readily lifted the 140-lb. cases from the ground to the wagon.



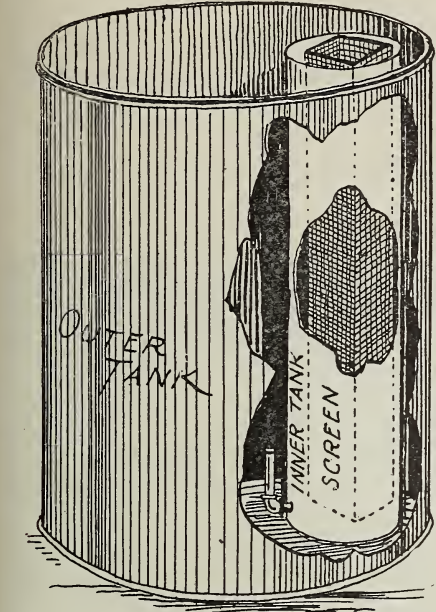
PRY FOR CASES.

A pry is made with a wooden shaft, the bottom fitted with a blade and a prong. The blade is caught against the end of the case; the prong bites the car floor; a pull on the shaft, and the case is in its place.

LEAVES FROM THE RECORD-BOOK.

Dr. Miller keeps a record-book. My hive-cover is a leaf of my record-book; every leaf is thus open to inspection as I walk down the apiary. Take queen-raising :

WANTED BEES	QUEEN	SPARE BEES
STORES	VIRGIN	STORES
CELL	CELL	CELL



tank, as shown is the illustration; and as the honey is also siphoned into the screen I get a clean well-ripened article.

HIVE PLIERS.

I note the editor is recommending the use of hive-pliers or tongs for foul-brood inspectors. Why not for the beekeepers? They are time-savers. Mine are in daily use. They will grasp a 10-lb. comb easily with one hand, leaving the other hand free to brush off the bees. Besides fewer stings and quicker work, they save backache.

STAGGERED HIVES.

I had of necessity to crowd my hives under one ramada. In all pictures shown of bees under a shed or ramada they are in one continuous line. To overcome this sameness I staggered the hives; between the first two posts I advanced the four center ones, leaving the two at each end in the original line. Of the next eight I put the second, third, sixth, and seventh forward, leaving the others in their original places. In actual work I was agreeably surprised to find more elbow room.

COAL OIL FOR ROBBERS.

When robbing is prevalent the clearing-away of all fresh propolized quilts, extra supers, etc., is important. Never use propolized sack quilts for smoker fuel. With a paint-brush and coal oil, go round each

There are nine places that are sufficient. In a moment you can tell where to find bees, stores, or cells. In case of cells, four lumps of earth are grouped for four cells.

Suppose you want a choice queen, or more than one. You do not open a hive needlessly, but go only to those with queens. Examine each. If extra good, place on it

three clods of earth; if good, two clods; if medium, one clod. Now you have your queen graded according to your judgment. Heber, Cal.

[This is the second of a series of two articles by Mr. Gray on handy appliances in the apiary.—Ed.]

OKLAHOMA HAS A BEE LAW

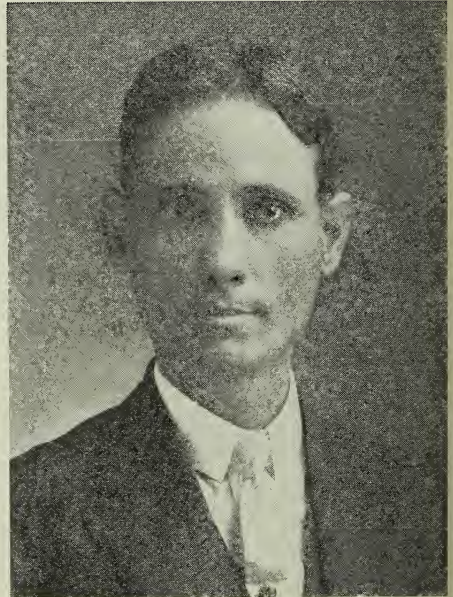
BY N. FRED GARDNER

J. E. Lemon, of Grant County, Oklahoma, representative in the Oklahoma legislature, is the man to whom Oklahoma beekeepers should extend grateful thanks for the enactment of the bill introduced in their behalf.

This law became effective June 3, 1915; and while, no doubt, many Oklahoma beekeepers are not aware of its existence, it stands ready to be applied when the need is felt. This bill carries with it the provision that I believe has not been duplicated by any law in any other state, and it remains for time to determine whether or not they are wise. This is to the effect that shipments of bees, queens, honey, etc., must bear certificates of inspection similar to those required by the nursery-inspection laws; or in case of no inspector where shipment originated, that a certificate subscribed and sworn to before a notary public.

The beekeepers of Oklahoma did not give Mr. Lemon the support that he should have had in passing this measure, but he succeeded in putting it through because of the high regard and confidence in which he was held by his colleagues of the legislature.

Geary, Okla.



J. E. Lemon pushed an up-to-date bee-law through the Oklahoma legislature.

CALIFORNIA FIELD MEET IN OCTOBER

BY FLORA M'INTYRE

The Ventura County Beekeepers' Club held a picnic meeting, Oct. 2, at the apiary of Mr. Wm. H. Allen, near Saticoy. Seven or eight automobiles brought the crowd and stood about, lending an air of prosperity to the scene. A long table made of stacked empty hives was provided on which our basket lunches were spread, and also the coffee, doughnuts, sandwiches, and mince pies offered by our host. I regret not having a picture of the scene with the eucalyptus-trees all about, and the apiary a few hundred feet below the festal board.

Our state senator, Dr. Mott, gave a talk on proposed legislation of particular inter-

est to beekeepers. He mentioned especially the plan to establish a state agricultural bureau analogous to the national institution for the same purpose, and having a department devoted to apiculture, this one bureau to replace the various state commissions which now cover somewhat the same ground. He urged the need for educating the legislators and the public in general concerning the contribution of the bees, both directly and indirectly, to the wealth of the state. He remarked that there was some foul brood in the legislature as well as in the apiaries ("fool brood I would call it," afterward remarked a small boy who was in

attendance, with both his ears wide open).

A paper on the benefits of bees to the fruit-grower, by Prof. A. J. Cook, State Horticultural Commissioner, was read before the meeting. Among other things he mentioned the complaint sometimes made against the bees that they carry pear blight. He said that, while it was doubtless possible for bees to spread this disease in the same manner as do other insects, they are only one of a number of agents that do this, and their removal would not greatly affect the amount of pear blight; that the beneficial work of the bees as pollenizing agents vastly outweighs any harm they might do by spreading pear blight.

Among others, President Wood called

upon Mr. J. D. Bixby, editor of the *Western Honeybee*, and a visitor from Covina. Mr. Bixby gave some conclusions from his experience with European foul brood, emphasizing the fact that he considered it necessary to melt up all combs containing or having contained diseased brood, but not other combs, in the diseased colony—as, for instance, super combs above a queen-excluder.

The meeting was one of the most interesting the club has had for some time, and would doubtless have been of benefit to some who were kept away perhaps by the rather cool cloudiness of the day.

Ventura, Cal.

A PROCEDURE FOR LATE FALL QUEEN-MATING

BY JOHN L. BYARD

Read before the Hampshire, Hampden, Franklin Beekeepers' Association, March 19, Northampton, Mass.

Having for some time presumed that I could procure select matings of queens during late August or early September, I devised what, perhaps, is a process with some unique features. These do not pertain particularly to the mating of the queens, but more especially to the nucleus in which mating occurs. I first selected a drone colony. This was done late in August. Queen-cells containing maturing queens were then procured, caged, and made ready for introduction. When introduced the queens were left for several weeks without attention, at the end of which time a large percentage of the queens were found mated.

The nuclei were prepared as follows:

Nucleus hives were the combination boxes in which either four full Langstroth frames could be hung or a larger number of Benton frames (one-third the size of the Langstroth frame, and hung in the opposite direction). I first supplied a candy-feeder in the form of a division-board. A frame containing a piece of new bright comb the size of a quarter or fifty-cent piece was then added. Sometimes, instead of this small piece of comb, I supplied a frame with a narrow starter. Two

or three frames with starters were also supplied on either side of the center comb.

When the nucleus was prepared, I shook a quart of queenless bees into the hive, closed the entrance, and set the nucleus in the shade. The next day, at about four in the afternoon, the virgin queens having hatched, I ran one into each nucleus, closing the entrance. On the following day I removed the entrance-block, liberating the



Scene of the Massachusetts convention at Stoughton this summer. The little hives could be opened without smoke or veil.

bees. These nuclei were then without attention for two weeks, after which time I found nine queens laying. It should be stated, however, that in introducing the virgins one was killed and one escaped in handling.

As a result, from nine virgins thus handled eight were purely mated and one was

doubtful. She is considered doubtful in her purity of mating only as imperfectly marked bees were seen in her nucleus. This may be due, however, to straying bees from nearby hybrid colonies.

The apparent success of these matings, even though they were not tested beyond the limitations of the fall of 1914, suggests at least that there are possibilities in this method of handling queens for pure mating. It is a rather extreme process, yet shows with decisiveness the value of fall manipulation.

With respect to the candy above mentioned, it should be stated that this is a variation of the Fuller candy, which calls for 12

pounds of granulated sugar. The candy which I used was made with nine pounds of granulated sugar and three pounds of coffee A sugar. I consider the coffee A sugar of value because it tends to keep the candy soft, which perhaps enables the bees to work it for a longer time.

In summarizing, I wish to emphasize that I am not aware of previous attempts of using candy and foundation alone, or a small piece of dry comb and candy. This process, together with the procedure late in the season, which is explained, tends to insure purity of mating, are the three items which I wish to report.

THE EDITOR'S VISIT TO GRIFFITH PARK NEAR PASADENA, WITH ITS CELEBRATED BEE ROCK AND BEE TREES

BY E. R. ROOT

In the last issue I referred to the fact that Mr. F. R. Buchanan, a former traveling salesman, and now of Glendale, Cal., took a party of us, including Mrs. Buchanan, Mr. and Mrs. Frank McNay, and myself, to Griffith Park, near Pasadena, Cal. This park, as has been stated, has a peculiar charm and interest for beekeepers in that it contains a natural curiosity in the way of an enormous bee-rock that has many colonies of bees. This rock was shown on the cover of our issue for November 1.

Besides this rock there are a number of bee-trees; but two or them had their bee-cavities so near the ground that the bees could be seen going in and out, without let or hindrance. Mr. Buchanan crawled up on a limb of one of the trees where there was one large knot-hole; and while stationed at that point I went up on a rise of ground, and caught him in the act of looking down into the bee-hole—see Fig. 1.

The other bee-tree is shown in Fig. 2. The entranceway is also within easy reach, and so near the ground, in fact, that Mr. Buchanan on the left and Mr. McNay on the right are looking down into the cavity, into which at the time the bees were going back and forth. Both men, as will be observed, are slightly baldheaded; and had the bees been disposed to be at all obstreperous they might have made the two who were "sticking their noses into other people's business" not a little trouble; but even though Mr. McNay put his hand into the opening there was no hostile demonstration.

Mr. Buchanan



FIG. 1.—Mr. F. R. Buchanan inspecting the entrance of a bee tree in Griffith Park, California.



FIG. 2.—Sticking their noses in other people's business.

drove us all over this park, then up around and on top of the mountains, for there are beautiful automobile drives in all directions in the mountains near Pasadena. I shall not soon forget this ride up into the very clouds; for from these heights one can look down on the cities and towns of this beautiful southern California—a country that abounds in bees and beekeepers, for bees seem to be everywhere.

A HOME-MADE BUZZ-SAW.

In our last issue I stated that Mr. McNay had retired, having only one colony of bees with which he amused himself. He also finds pleasure and recreation in other ways. In his back yard he has a workshop with carpenter tools and a home-made buzz-saw made out of an old worn-out bicycle. In Fig. 3 we see the outfit just as Mr. McNay used it in his workshop. The bi-

cycle frame is mounted slightly in front of and beneath the saw-table proper. The rear wheel, minus its pneumatic tire, is mounted directly beneath the saw-table in such a way that the two sprockets are in exact alignment. The bicycle chain, slightly

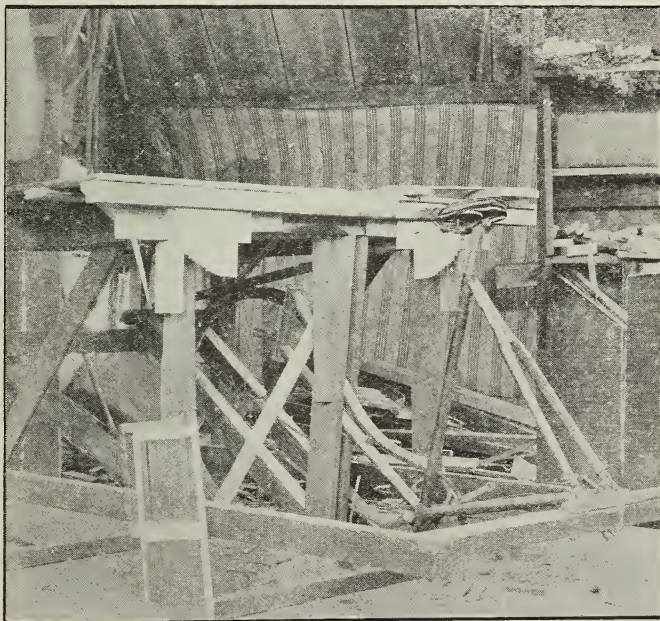


FIG. 3.—Frank McNay's home-made buzz-saw table, using an old bicycle for the motive power.

lengthened out with more links, is made to drive the rear wheel now placed forward under the saw-table from the crank sprocket. Directly over this rear wheel is a little pulley that drives the mandrel of the buzz-saw. A suitable belt runs from the hollowed-out rim of the bicycle wheel to the mandrel above.

The operator places himself on the saddle of the bicycle, his feet on the cranks, when, presto! he can drive his buzz-saw at a high rate of speed.

Mr. McNay says that with this home-made outfit he has made different articles of furniture that decorate his home, and also parts of hives, for with this outfit he can make almost anything he desires, and at the

same time it affords him much pleasure.

It should be observed in this connection that Mr. Frank McNay tested out the first Cowan reversible extractor we ever made. Knowing him to be an extensive beekeeper, and capable of judging of the merits of a new device of this sort, we sent him our first model; and when he pronounced it good we went ahead and put the machine on the market—practically the same machine bearing today the name of the “Cowan two-frame rapid extractor.”

Mr. F. R. Buchanan, likewise retired, takes his playthings with his big powerful automobile and with the bees. He knows every beekeeper in the vicinity, for he has motored all over the country.

PUT A GUARD OVER YOUR SAW

BY MAJOR SHALLARD

I have an iron guard over mine now; but if I had only put it over earlier I would now have two hands (see p. 863, Oct. 15).

Possibly some particulars of my mishap may be of interest. I was ripping top-bars when my foot slipped on the sawdust, and my left hand came in contact with the saw, cutting the palm across and the thumb off at the bottom joint. As soon as I saw what the trouble was I grabbed the arteries, stopped the engine with my foot, and started off down the road for help. My object was to get away before my wife saw the hand, as she has heart trouble. After going about a mile I met a man in a sulky, and got a ligature around one wrist and a towel over the hand, which then did not look so bad. I sent the sulky for Mrs. Shallard; and when she came we went into Woodburn (two miles), and I tried to ring up the Coraki doctor, eleven miles away. Failing in this we got a car and started for the Coraki hospital. On the way “the necessary” got running away from me so fast that I asked my wife if she could tie her handkerchief around the wrist. She managed it all right, although she got her hands

covered with blood, and she usually faints if she sees a cut finger. She held up very bravely all through, and I say thank God for a good wife.

We reached the hospital at 1:10, or one and a half hours after the mishap, and I had to wait until 3:20 for another doctor from Lisinore, 20 miles away. They operated then, and I woke up at 1 o'clock next morning minus everything but the palm, but feeling good and happy. They were very kind in the hospital; and as my wife stayed and looked after me we had quite a jolly time. In fourteen days I left the hospital with nearly all the outside wounds healed, which shows I had very little poison in my system. Had I been a whisky-drinker I should probably have come out feet first.

It is five weeks today since the accident, and the hand is getting on nicely, although it will not be ready for work for some time to come. Meanwhile my son Phil is hustling the business wagon along, and I am occupying a box seat, looking out for stumps.

S. Woodburn, N. S. W., Sept. 19.

TURNING FRAMES

BY R. F. HOLTERMANN

Dr. C. C. Miller gives me permission to go through “three motions in place of one in turning a frame over.” Probably he is like myself, and has never attended a moving-picture show. Let me ask Dr. Miller how he can turn a frame sideways with *one* movement? What is *one* movement? Is a circle drawn out of one line? How many straight lines are there in a circle?

However, doctor, I was not addressing you. When people have kept bees as long as you and I have I suspect that combs can be held in any position with safety, especially when the combs are allowed to stay in the hives until the bees themselves chew down the walls and rebuild them. Even in our climate it is not safe to hold new comb



Havoc wrought by the great Louisiana hurricane and flood. Everything in the apiary destroyed and the bees drowned. The owner, J. D. Bailey, of New Orleans, to reach his ranch, went by boat a mile and a half over what would ordinarily have been dry ground.

filled with honey, pollen, and brood side-wise, and, after cheerfully allowing every one to do what he can do—any way, without my permission. I think the safe advice to give is, not to hold combs on their sides “in this locality.”

What Dr. Miller writes on the same page

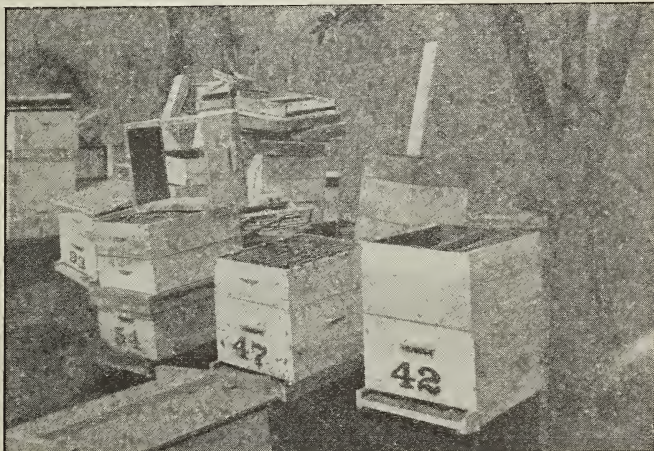
about good and bad qualities transmitted in breeding I quite agree with. Where good and bad traits are mixed, the fruit is mixed, uncertain, with probably a tendency to deterioration. Good fruit can be obtained in nature only by weeding out bad tendencies. Brantford, Canada.

AN APIARY IN THE RECENT GULF HURRICANE

BY J. D. BAILEY

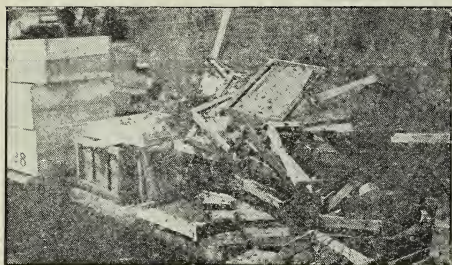
Our loss in the terrible storm that visited this section Sept. 29 has been complete, nothing being left out of a well-established apiary of sixty ten-frame colonies except two found floating. The roof of our honey-house was carried away, and some of the hives were found in the swamp a great way off. Nothing was left standing, as the water rose to a height of five feet within thirty minutes. The wind blew 85 miles an hour, and for the period of one minute attained a speed of 120 miles. The lowest barometric record ever taken by the Weather Bureau since its existence was recorded at 28.11.

It has been estimated that 350 persons lost their lives, and the damage runs up into the millions of dollars. I had a splendid



Wild bees from nearby trees cleaning up the job. No. 54 contains what is left of a strong colony found floating.

crop of honey in the hives, and was contemplating extracting last week. Two years



Rollers cleaning up after the flood.

of hard work has also been swept away; but I feel satisfied when I consider that our old keeper did not lose his life. The only thing that saved his house was the water, that rose to a depth of over two feet on his floor, keeping the wind from getting under the house. I am starting all over again; but the situation does look discouraging. I had a hive at home used for experimental purposes; but that, too, was lost. Not an orange or pecan remains to tell the tale. It will be a long time before the country regains its normal condition.

New Orleans, La.

WHERE THE QUEENS QUAHK

BY A. TSCHOEBERLE

Mr. Doolittle asks the question, page 750, Sept. 15, "Did any of the older heads ever hear a virgin queen pipe or quahk in any other place than the combs of the hives where there were rivals among these queens?" In answer I must say yes.

A year ago last June I had nine queen-cells and no nuclei for them; so I thought I would put them in cages for two or three days till I got time to make some nuclei. I caged and put them into the upper story of a strong hive, and two days later I could hear the young queens piping and quahking. The next day I opened the hive to see how many there were hatched. All nine were out. That evening I went over to listen, and I could hear the queens piping and

quahking. One would start piping and you would think all the rest would answer by quahking. The next day I took them out and looked through the lower part of the hive to see if there was any signs of queen-cells, but there were none.

Now as to the piping before the after-swarm, you can always go by that. This last summer I had two hives standing close together, and both of them swarmed the same day. Then I concluded I should let them go until they commenced piping. I went over every evening to listen, but I never could hear one piping or quahking. When I opened the hive there was only one young queen in each.

Marysville, Wash.

A NOVEL PEAR-BLIGHT REMEDY

BY J. C. GRAHAM

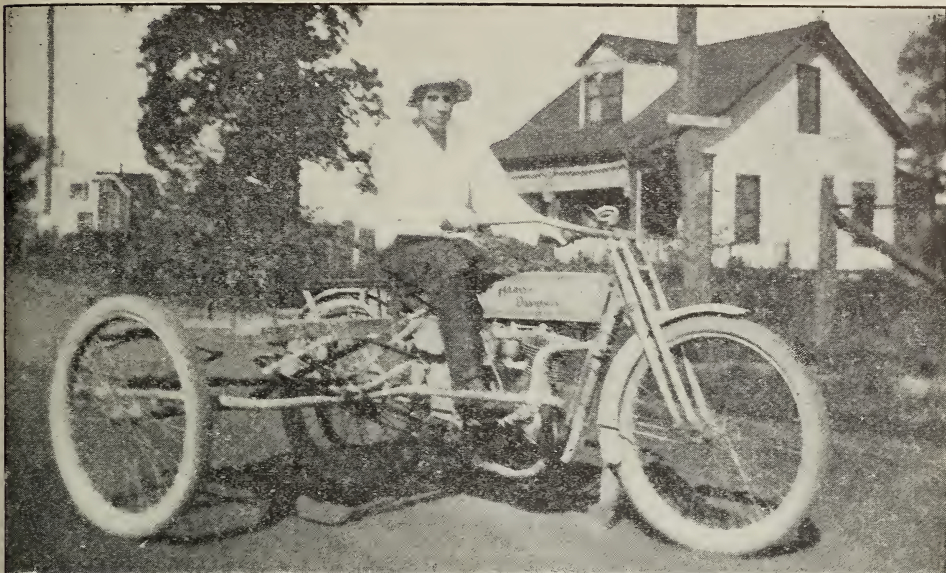
About two squares from my home there is an orchard of about 200 pear-trees belonging to a friend. In the opposite direction a friend has one pear-tree in his front yard. Two years ago the orchard and the single tree were badly affected with pear-blight. I told each friend of a remedy I had seen tried. The man with the single tree tried my remedy; but the other laughed at me. Last season the orchard was in a worse condition than the year before; but the single tree was in much better condition. This season the single tree is free from blight. The orchard is about a third dead, and the rest is in very bad order.

I suppose you too will be skeptical, but please try the remedy before you laugh. It

is nothing more than this: Drive 8 or 10 nails into the body of the tree; and, if not completely cured, as many more the next season. You will find that the nails will disappear and the head will drop off. The sap takes up the iron as it rusts, and the blight simply does not come back. I don't pretend to know why, but have seen it tried again and again, and find it will work.

One other thing: When my bees can fly in the spring, when the orchard referred to above is in bloom my friend has a nice crop of fruit. When it is too cold for the bees to fly when the trees bloom, he has no fruit. I have been living here eight years, and this has always been true:

Mayfield, Ky.



A motor cycle and side car are inexpensive to run.

THE MOTOR CYCLE FOR APIARIAN WORK

BY L. A. P. STONE

I use a motor cycle and side car instead of a light automobile. Recently I had an automobile, but the cost of upkeep more than overbalanced its usefulness. The cost of running the motor cycle and side car is slight, and there is very little trouble. The motorcycle will carry 200 pounds besides

the rider. I use it mostly in distributing honey.

There are only three tires to get punctured, and one cylinder to get out of order. Even this never does if overhauled once a year. Moreover, I can run sixty miles on one gallon of gasoline.

I do not believe very many one - cylinder motoreycles will pull as much as mine, as my make of machine is more powerful than the majority.

The side car was built to order, and has a platform 35 by 25 inches. The platform is mounted on light springs so that it is more comfortable to ride on than the saddle of the motorecycle. In fact, I prefer to ride on it instead of the saddle when the side car is not loaded, because I avoid all chances of tipping over when going around turns or along



The cycle will carry 200 pounds, exclusive of the driver.

slanting roads. The side car is very light (weighs about 75 lbs.), and its width is not quite that of the track in the road, which, however, makes little difference on an ordinary road.

My apiaries are scattered, and all away

from home, so I save a great deal of time by using a motor cycle, and also a lot of expense by using it instead of an automobile. Of course, if I have heavy hauling to do I hire a team; but this is not very often.

Erie Beach, Ont.

HOW TO OBVIATE ALL TWIST WHEN PUTTING HIVES TOGETHER

BY C. E. FOWLER

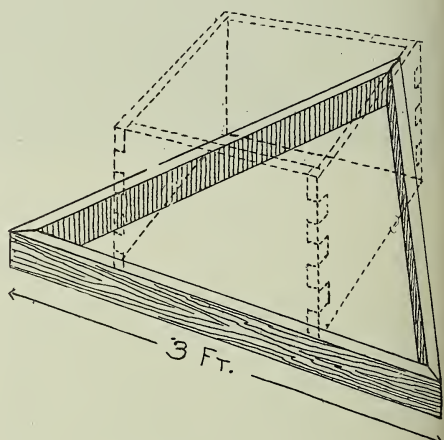
I bought a deep super for a sample; and after nailing it together I found it twisted 1-16 of an inch. Now, if I put it on top of another super that is twisted as badly in the opposite way, and three corners touch, there will be an $\frac{1}{8}$ -inch opening at the fourth corner. The twisted hive seems to me the great bugbear in home-made hives.

Of course you can use your eye; but I wanted something more accurate, and something that could be used by unskilled persons; so I studied the matter over, and found that if three straight boards form a triangle, every part of this triangle is in the same plane. I made my triangle three feet on a side, of $\frac{1}{2} \times 3$ -inch pieces. If you place this triangle on top of a hive, one side of the triangle on one side of the hive, the other two sides of the triangle will touch the two opposite corners of the hive. If all your edges of the triangle and hive are straight, and the triangle touches all four corners at once, your hive is absolutely true. You can use the same triangle on your bottom-boards, covers, frames, or any thing that has four sides to it.

If you are making many hives it would be better to have your triangle heavier (but of the same size—three feet), and resting on the bench, and to put your hives on top. You can use both sides of the triangle, and it makes no difference if the sides of the triangle are wider at one end than the other,

provided the edges are straight and meet at the corner. No matter how light it is you cannot strain the joints as would be possible if there were four sides.

If every hive is square and made the same size, half the battle is won.



If you make your own hives you can make them 1-16 or $\frac{1}{8}$ inch deeper than you need; and then, after they are thoroughly nailed, make the top true; then gauge each side and true up the bottom. Paint it before it gets wet.

Hammon, N. J.

NET-WEIGHT REGULATIONS UNJUST TO BEEMEN

BY E. C. BIRD

The net-weight regulations, demanding that the net weight of each section of comb honey be stamped upon the top of each section, is manifestly unfair, onerous, and impossible to comply with. The basic principle is the same as though the farmer were required to stamp each ear of corn with the net weight, or the poultry-raiser to stamp the net weight of each egg placed on the market for interstate shipment; or that bananas be required to show net weight.

When a dealer has an order for eggs or

bananas he does not select for a dozen twelve of the smallest and least desirable ones, but with the nine or ten large and most acceptable ones adds a few of the smaller, so that on the whole he gives a proportionate share of the large and small. Now the section of honey, like the ear of corn and the eggs, is the product of nature over the thickness and extent of which the producer has no control. The bees may finish it in any conceivable variation of weight from 10 to 18 ounces.

Again, the demand for honey includes the neatness, delicacy, and attractiveness of the article more than the weight of a certain portion. The market demands that it be cased so that the white and well-finished sections shall be separate from those of darker or less presentable combs. Hence the combination of these two requirements, neatness and weight, makes so many varieties to case separately that it is impossible for the common workman to case honey

under this system. It causes the producer to procure expert and expensive assistants or to send his product by a circuitous route in order to have it properly graded at increased expense at some central grading-house.

These considerations should stir the comb-honey producers to combine for a more equitable market condition and to overthrow a system of grading which the public does not understand nor demand.

Boulder, Col.

NOTES FROM GERMANY

BY J. A. HEBERLE, B. S.

Honey, "the essence of all that is good," presents a great variation of color, aroma, and taste—mostly a combination of nectars from various flowers and blossoms. In America there are vast areas seeded to alfalfa, and at the time of bloom the bees will visit other flowers to such a small extent that we may properly speak of alfalfa honey. The same holds true for white clover, basswood, orange blossom, etc.

In Germany, with the exception of heather and the juice from a fir-tree, we harvest but small quantities of honey the nectar of which is chiefly from one plant—sainfoin, akazie, buckwheat, etc.

DANDELION HONEY.

Here in the extreme southern part of Germany, but a few miles from the Alps, we harvest a little honey from the dandelion, but all of it has some nectar from the fruit-trees and other flowers mixed with it. The color of dandelion honey is that of gold with a very decided aroma, and tastes rather strong, especially to those used only to mild honey. The taste is fine when mixed with the nectar of other flowers in such a proportion that the taste of the dandelion is not so very prominent that it has lost its pungency.

The honey is very viscous; and, if not extracted immediately, some of the combs will break—even old combs. I have seen it crystallize within 48 hours after extraction, although it had been only partly capped. By the way, this is the only variety of honey here that may be extracted before the combs are capped without losing quality. All the honey from other flowers, if extracted before capping, shows a decided inferiority in taste—something like a raw, unfinished product, and it does not keep well. However, uncapped honey may be extracted if no nectar has been coming in for some time when the surplus water has

been evaporated, and the bees have ripened the honey, but for lack of nectar have not capped it.

Dandelion grows here in great profusion, especially in fields that have a few years before been cultivated with the plow. The country appears during the second half of May like a chessboard in gold and green. It begins to bloom here between May 10 and 15, and lasts for two weeks. Some flowers are seen at the end of April, but they are not numerous enough to be of importance. The pollen which it furnishes in great quantities is of orange-yellow color.

The great drawback is, that this early in spring most of the colonies are not at their best, and the weather is very unfavorable. It is cold, and much rain and wind prevail on account of the nearness of the Alps and the elevation of the country.

The country here is a natural pasture. The meadows are not excelled anywhere. The secretion of nectar from a great variety of plants from about the middle of May till the end of June would be good, and the quality of the honey excellent; but the weather does not favor the beekeepers. Usually in this immediate vicinity about July 1, the honey harvest is over. What the bees get afterward they need themselves, and usually a few pounds of sugar has to be fed in the fall to provision them amply till the following spring. Some years (the exception) bees may store surplus in July or the first of August, depending on the weather. Considerable difference may be noted of apiaries only a mile or two apart, depending on the configuration of the country—a protected valley, for instance—"locality." Oranges may do well on a hillside, but freeze on land only a few hundred feet further down.

THE HONEY CROP IN GERMANY.

From reports of different parts we may

say that Germany's honey crop this past season has been above the average. In some parts it is good, and even very good; in some, on account of drouth, it is but fair. However, a good crop in California differs greatly in the number of pounds per colony from what is called a good crop in Germany. Here we have places where an average of 20 lbs. per colony is considered very good. Only rare places may in an extra good season bring as much as 100 lbs. per colony by migrating with the bees.

HONEY BY PARCEL POST.

Much honey is sent here by mail. Eleven pounds from one end of the empire to the other costs but 12 cents; and if the distance does not exceed 60 miles the charge is but 6 cents. I send only crystallized honey through the mail, so no damage has ever occurred by the roughest handling. The cans used differ from the common gallon can with screw cap. They are round, with a well-fitting cover that can be taken off.

Kempton, Bavaria, Germany.

TWO-STORY HIVES FOR WINTERING

BY J. M. DONALDSON.

Wintering over a set of empty combs has been my way of wintering in three widely different localities. In two of the locations I used winter cases, but here in central New Jersey the added protection does not make enough difference in wintering to justify the extra cost and labor.

Ten years' experience in this location has taught me that colonies with young queens and plenty of good stores if wintered in two-story hives will come out good and strong in the spring. Some who winter bees in the cellar or in well-packed winter cases may wonder what advantage there is in using two stories if the lower set of combs are empty. There are several advantages. Mr. Hill names two of them when he says that the lower set of combs acts as a windbreak, and that the bees are not so apt to fly out on bright cold days.

I do not consider a one-story hive deep enough for the bees to store enough honey to carry them safely through the winter and have enough left so that brood-rearing can go right along till honey and pollen are coming in, and at the same time keep up late brood-rearing, so there will be a large force of young bees to winter. With a two-story hive the bees can crowd the queen clear out of the upper story, but she will still have that lower set of combs for a brood-nest. Should the upper set be entirely filled and sealed down to the bottom-bar the lower set makes an ideal clustering-place until some of the honey is consumed and the winter nest formed in the top story. When the queen begins laying, the brood-nest will be in the upper story, and the first examination of the colony can easily be made without unsealing the cover by simply tipping up the top story. When the queen has expanded the brood-nest so that there are five or six frames of brood, the bodies should be shifted, the queen being used in the top story, as her brood-nest will soon

occupy the empty combs if a frame of brood is put in when the shift is made.

The editor thinks there would be danger of mice getting in and destroying the lower set of comb. I did not think so; but when I had bottom-bars gnawed almost in two, and whole sets of combs destroyed, besides having the bees disturbed, then I knew for a fact that there was danger. I now use an entrance-contractor with frame-spacing staples driven in the opening.

Would honey left in the lower set of combs in the spring invite robbers to enter? I don't know, because honey is seldom found there, even if there was quite a little when winter set in. I have always had an idea that the set of empty combs discouraged robbing. It's a long way from the entrance to the honey; and if robbers should succeed in entering they have the same road to travel again before they can spread the news.

Moorestown, N. J.

THANKSGIVING

BY GRACE ALLEN

Across the land I hear a noble strain,

A mighty song, triumphant, of thanksgiving,

A proudly grateful hymn sung not in vain

So it but stir a chord of larger living.

And may my voice commingle, as I strive

A low, full-throated, yearning note to sing;

Give thanks, O hosts, for honey in the hive,

But let me lift my song

To celebrate the long

Courageous quest and uncomplaining wing!

Give thanks for harvests, aye, and join me then

In thanks for labor of undaunted men.

Rejoice for vict'ries won for truth and right,

And then rejoice in hearts that fight the fight.

Full thanks we yield for peaceful blessings streaming

Across our lives, with glimpse of dream come true;

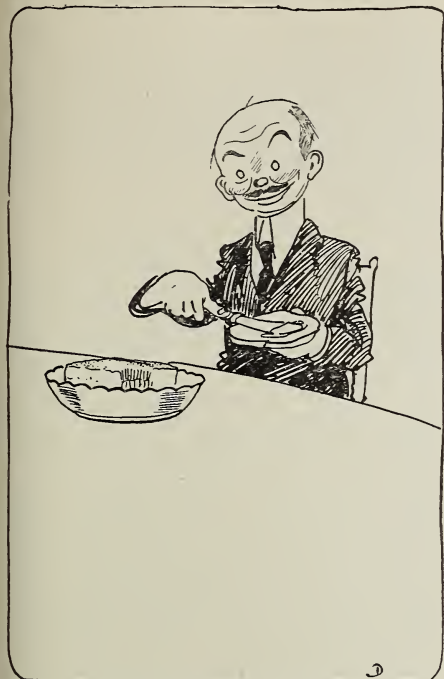
But most of all I prize the very dreaming,

And some slight will to do.

Our thanks then, God, for dreams that dare to soar,

And faith that thrills to work. And grant us more!

Heads of Grain from Different Fields



The Backlot Buzzer

BY J. H. DONAHEY

Now's the time of year when folks begin to think about buckwheat cakes and home-made sausage. Pass the honey, please.

Some York State Notes

Clover was scarce in the spring, but now I wish you could see it. The fields and woods are a bed of it—white, alsike, and crimson. Next year should be one of the greatest honey years we have ever had if the clover does not winter-kill. I still have the supers on the hives, and they are crowded with bees. The queen is laying to her full capacity.

I have thirty colonies, of which only four cast a swarm this year. To prevent swarming I divide by the Alexander plan. I place the queen in the lower part of the hive and set the old hive on top; and when the brood is all hatched I shake them in the hive with the queen. I find it almost wholly prevents swarming. This plan makes extra-strong colonies. I requeened all of my colonies in July and August, which accounts for my hives being full of brood and eggs at this time.

The crop of honey here has been only about half the average. This was owing to the late cold spring lasting until the middle of June. From that time until the present there have been very heavy rains. The bees were able to work about half time.

Rhinecliff, N. Y.

PETER WHEELER.

Introducing by the Smoke Method after Queen-cells are Built and Destroyed

I have learned some things about the smoke method of queen introduction that may be of interest to others. The first season I used it with good results; the second very poor; the third a little better; and

this year I have learned why the difference. Queens can be successfully introduced by the smoke method during a good honey flow, in a few hours after the old queen has been removed; but when no honey is coming in, the loss will be heavy; and as I do nearly all of my requeening after the main flow is over. I wait about eight or nine days after the old queen is removed. Then I tear down all queen-cells and run in my young queens with smoke, and get 100 per cent accepted. This is a little trouble, but not so much as giving two or more queens to one hive.

I have yet to lose my first queen given to a hive with laying workers when she is introduced by the Miller smoke method. I use three puffs of smoke to a single-story hive; six to a big two-story ten-frame hive, and nine if the hive is a three-story ten-frame.

I use planer-shavings in the smoker for this purpose, and find that they give better satisfaction than anything else I can get.

FINDING 35 QUEENS AN HOUR.

I should like to know how many queens a good operator can hunt up and clip in an hour in ordinary-sized hives. I have heard of one man who claimed to catch 35 in one hour. This is much better than I can do.

Montgomery, Ala.

J. M. CUTTS.

[Thirty-five queens an hour is "going some," even if the queens were in nuclei. We wish the one who has worked at that rate would tell us how he does it.—Ed.]

Parcel-post Shipments Successful

We have made a successful attempt to ship extracted honey by parcel post. We sent a number of pails, and every one arrived all right. We shipped in friction-top five and ten pound pails, with the cover pressed down and solder run all the way round to hold it solid. The pail was then enclosed in a stout wooden case, so that, when nailed shut, it fit snugly.

We are going to try the small screw-top square can. If it will do as well (and we believe it will) it will save much tedious soldering.

The price realized for honey shipped in this way will be much more satisfactory than what we get from the wholesale buyer, and at the same time the housewife in the city gets it cheaper than she could at the grocery.

We shipped to Birmingham, which is in the second zone from us.

Folkland, Ala., Oct. 12.

SCHUG & DEWITT.

Wintering Bees Covered with Hay in a Barn

My barn has a light loft, and no battens on the siding around the loft, so it never gets damp or steamy. I put down about an eight or ten inch layer of hay, lay two boards on it, and set the hives on these boards close up to each other, having first put on supers and packed them with burlap and excelsior. Then I put queen-traps or pieces of queen-excluder over mouths of hives in a way to let in plenty of air and keep mice from getting in. I next set sticks, about eighteen inches long, slanting against the front of the hive, and cover with a layer of hay thick enough to keep out the light and drafts of wind, but not so thick but that air can go through.

Then I stack hay on the other side and each end and top of the row. It keeps out the noise, and keeps the temperature even. I live near the southern line of Minnesota, and put my bees in last fall about the last of October, in a part of the barn where the sun would not hit them. The last of March I took them up one fine morning and set

them in a new place where the sun comes in the hay-door in the morning and forenoon. I banked each end and back of the row of hives with hay and took off the queen-traps, and they had a good fly and clean-up, and were happy as a dusty traveler after a bath. Every day when it is warm enough I open the door and let in the sun; and when it is cold or windy I leave it shut. If they want to fly they go through the cracks.

Their hives were perfectly clean, and had very few dead bees in them. Our coldest weather last winter was 29 below zero one night, and 24° below two other nights. I am well satisfied with the way they wintered.

Sherburn, Minn.

D. M. REYNOLDS.

Remove the Snow from the Front of the Case during a Thaw

From my observations and a limited experience I am inclined to believe that, when there is an anticipated thaw, it is better to remove snow from the covers and ground near the hive or winter case. Any considerable bulk of snow allowed to melt undisturbed produces an excess of moisture about the hive. The slow melting by day and freezing by night tends to produce hard ice, which is very objectionable about the entrance and adjacent parts.

The direct rays of the sun upon the hive will, many times, bring the bees out while there is yet a depth of snow enveloping almost every available alighting-place, and the bees, not being fully adapted to outside conditions, fly about in a way not unlike Noah's dove, seeking some place whereon to rest her feet. Finding none, they drop, more or less exhausted, on the snow, soon chill, and never return to the hive. Had the snow been removed, the little that will remain is quickly melted and often out of the way before sufficient warmth reaches the bees to bring them out. Thus with a comfortable place on which to rest, the bees will be invigorated rather than chilled, and many more be able to make a safe return.

Barnesville, O.

THOMAS DEWEES.

Black Bees on Red Clover

We still have lots of alsike and white clover in bloom, and the bees are working on them when the weather will permit. Some one has said that bees work on red clover only in a dry season. I thought that might be the case, as my bees worked on it last season when we had a drouth, and this season has been very wet. Just once did I find the bees very thick on the red clover. Mine are not long-tongued red-clover bees, but just common blacks. How about this?

Decatur, Ind., Sept. 24. W. W. HAWKINS.

Sealed Covers for Wintering

It does not always pay to experiment. When you have a sure thing it is well to stick to it. I found this out last winter. Having heard and read a great deal about giving ventilation to bees in winter quarters I resolved to give the thing a trial. I left on the hives the boards used with the bee-escapes. The latter were removed and a strip of screening tacked over the opening. On this I laid crosswise four sticks of wood and covered them with burlap. Then I put a heavy layer of straw over and around the hives, completing the job by placing a water-tight cover on top of the regular wintering box which I have been using for years.

Well, these bees wintered very poorly. Two colonies were dead outright, two others were queenless, and I did not take notice of it till May. Then they tore to pieces four good queens, which I introduced in the regulation way. By the time they had laying queens the season was well advanced. The remain-

ing colonies were of medium strength. But my whole apiary was queered by this experiment. It would have been a poor season anyway. This made it doubly so. Before this, with sealed covers, I had always wintered all of my colonies. They always came through in fine order, and gathered good crops, so I shall go back to the good old way.

One man's experience may not count for much; but the sealed cover has some doughty advocates—e. g., the editor of GLEANINGS. Even if this were not the case, I should say I care not what course others may take; but as for me—give me the sealed cover every time.

Detroit, Mich.

L. LIST.

Sees Laying Workers Lay

I have caught two laying workers in the very act of laying. The first time was about ten years ago. I had a case that baffled me. I finally went through the hive and selected the frame which had the most recently laid eggs. I held it in my hands for some time, and after a little I noticed a bee back into a cell.

I nabbed her, and there were the freshly laid eggs. I opened her and she had eggs in her body. I had tried to raise a queen in the hive by putting brood and eggs in the hive, but failed. After this I had no trouble in requeening the colony.

Just last year I had another case of the same kind. I tried finding the laying worker in the same way, but could not do so. At last I took the comb with the freshest-laid eggs and watched it for some time. Then I saw the bees clustering about one bee with their heads all pointed toward her. She was an old-looking bee, somewhat longer in the abdomen than the others. I killed her, with the same results as in the case above. I soon had a young queen in the hive.

In the fifty years of my beekeeping experience I have not always had such good fortune. I would suggest that the best way to oust the laying worker would be to open the hive, take out the frame with the freshest eggs, and put them in a separate hive. Nine times out of ten you will get rid of the laying worker. You can then raise or introduce a queen.

Leeton, Mo.

JOHN M. MOHLER.

Getting Ready for Winter in Arizona

I wintered fifteen colonies over a super of extracting-combs last winter. After the bees were done gathering honey in November I took off the supers and removed the brood-chambers from the bottom-boards. Then I set the supers that were almost empty on the bottom and set the brood-nest on top, so the bees could keep warmer during cold weather. Then I fixed the entrances with the entrance-blocks. The bees wintered finely. The mice never got inside of the hives. The moths damaged but one comb, which was in the side of the brood-chamber.

This fall I had twenty colonies—some three, some three and one-half, and some four stories high. Most of the combs are full of honey, pollen, and brood.

Roosevelt, Ariz., Oct. 6. JOHN B. BUREAU.

The Amours of Apis Mellifica

A dog will look up in his master's face,

And knowingly wag his tail,

The man, answering back with a friendly smile—

At least it will seldom fail.

The way a *bee* has of making love

Is one of the strangest things;

It sits right down, gives its tail a tilt,

And gracefully wiggles its wings.

Grafton, O.

MRS. S. J. H. S.

A. I. Root

OUR HOMES

Editor

Enter not into the path of the wicked, and go not in the way of evil men. Avoid it, pass not by it, turn from it, and pass away. For they sleep not, except they have done mischief; and their sleep is taken away unless they cause some to fall. But the path of the just is as the shining light, that shineth more and more unto the perfect day.—Prov. 4:14, 15, 16, 18.

I have always been busy. My mother said when I was but an infant I always found something to interest me and to be busy with. Almost sixty years ago, after I had become engaged to Mrs. Root I decided to start in business. I have told you there were two other jewelers in our little town of Medina, and the two at the time were almost "one too many." There was some merriment about my starting a *third* watch-repairing establishment. I borrowed a ladder, hung up my sign on a suitable post in front of the window of a vacant store; and before I got down from the ladder I had a job of cleaning a watch; and I do not believe I have ever been out of a job since that time. In fact, I tried so hard to keep up with my work I was soon obliged to work evenings as well as all day; and when I had been in the business barely ten years my health began to fail, in consequence of working so many hours indoors. A doctor in a nearby drugstore, with whom I was well acquainted, suggested that a glass of beer, say every day, or when I was worn out, might be a help. Now, this doctor was a good Christian man, and he was honest and sincere in thinking the *beer* would be a benefit. How many doctors are there at the present day who would give the same advice? If you know any such, try to persuade them that they are a relic of a former age.

Well, between my place of business and my home there was a saloon. They did not call it a saloon then—it was a grocery; but the grocer kept beer among other commodities. I finally got in the habit of having a glass of beer when I was tired and worn out, and needed rest and sleep. As the doctor said, it *did* seem to brace me up a little, for the time being. There was quite a stir in regard to temperance matters, however, even as long as fifty years ago; but as I always took my drink usually after nine or ten o'clock, nobody knew much about it.

Well, I remember one evening, when I came into the grocery, a man who just taken a drink looked at me in surprise and said, "Why, I didn't know that Mr. Root ever drank beer." I knew this was a sort of clip at me, and I felt a little guilty; but

the reply of the grocer was a still more severe clip. It was this:

"Oh! Mr. Root is one of my regular customers."

I went out and went home; but I kept hearing ringing in my ears, "Regular customer! regular customer!" My wife probably knew of my glass of beer; but as she was of English parentage she probably did not feel much worried, for people did not look at such things then as they do now. The claim that I was a "regular customer" was, of course, an exaggeration, and I hardly need say to the friends that the saloon-keepers have been for the *whole fifty years* that have elapsed since the incident mentioned, guilty of *exaggeration*. This matter of exaggeration reminds me that at one time, years ago, a statement came out in the papers that Mark Twain was *dead*. Finally one of the reporters of a daily paper called his attention to it; and with pencil and notebook in hand he said, "Mr. Twain, what have you to say to this? What shall we tell the people about it?"

I think Mark looked at his interlocutor a little while, and with a little smile on his face replied, "Just say for me that the statement is *greatly exaggerated*."

Before I take up the subject of exaggeration, however, I wish to say a word or two about the doctors of the present day who advise beer for men and women who are run down because they stay indoors so much, or eat three meals a day when two would be a great plenty, etc. The whole wide world now is ringing, as I have told you repeatedly, with the slogan of "efficiency;" and this whole wide world is also not only declaring but *insisting* that alcohol in *any form* and in *any quantity* is a foe to efficiency. Insurance companies, railroad companies, manufactories, and everybody else demand men and women, boys and girls, who do not drink *at all*. Any drink that contains alcohol in any quantity whatever is tabooed; and whisky and brandy are ruled out as medicines; and the time is soon coming when doctors are going to cure people without booze, without stimulants or dope, and without stuff that comes in bottles. Twenty years ago Dr. Dewey published a book that made quite a sensation at the time, declaring that drugs and medicines are not needed, even in cases of typhoid fever; and he gave a long list of typhoid patients who were cured quicker and were left in better shape where they had no medicine whatever. We may thank

God that a periodical of such authority and such wide circulation as the *Ladies' Home Journal* is giving us some "hot shot" along this line. Here is a clipping from their October issue:

THE PASSING OF THE MEDICINE BOTTLE.

We are certainly making long strides forward when we read such words as these, and they concern us all because they concern our health. And it must be well borne in mind that the writer, Sir William Osler, M.D., is unquestionably the foremost living American physician, and the highest authority on drugs in the medical world. He says what follows, in the *Encyclopædia Americana*:

"The new school does not feel itself under obligation to give any medicine whatever, while a generation ago not only could few physicians have held their practice unless they did, but few would have thought it safe or scientific.

"Of course there are still many cases where the patient or the patient's friends must be humored by administering medicine, or alleged medicine, where it is not really needed, and indeed often where the buoyancy of mind, which is the real curative agent, can be created only by making him wait hopefully for the expected action of medicine; and some physicians still cannot unlearn their old training.

"But the change is great. The modern treatment of disease relies very greatly on the so-called natural methods, diet and exercise, bathing and massage; in other words, giving the natural forces the fullest scope by easy and thorough nutrition, increased flow of blood, and removal of obstructions to the excretory systems or to circulation in the tissues.

"One notable example is typhoid fever. At the outset of the nineteenth century it was treated with 'remedies' of the extremest violence—bleeding and blistering, vomiting and purging, antimony and calomel, and other heroic remedies. Now the patient is bathed and nursed and carefully tended, but rarely given medicine.

"This is the result of the remarkable experiments of the Paris and Vienna schools into the action of drugs, which have shaken the stoutest faiths; and partly of the constant and reproachful object lesson of homeopathy. No regular physician would ever admit that the homeopathic 'infinitesimals' could do any good as direct curative agents; and yet it was perfectly certain that homeopaths lost no more of their patients than others. There was but one conclusion to draw, that most drugs had no effect whatever on the diseases for which they were administered."

Now let me go back a minute to give the Woman's Crusade, that started here in Ohio in the early spring of 1874, a little credit. If I remember correctly, Dr. Dio Lewis first made the suggestion that the mothers of our land should meet in a body together and invade the saloons. A lot of Ohio mothers did this. They went into the saloons here in our town of Medina, expostulated with the saloon-keeper, sang hymns, and finally knelt in prayer on the filthy sawdust floor. When I heard what was going on I hesitated about going into a saloon for any more drink. Even though I did not go to church at the time—at least not very much—I had a reverence and respect for those earnest, faithful, God-fearing women, and I broke off then and there, and soon decided that a little more outdoor work in the garden

would be a better tonic than booze. I think I used to get Kenner ale at the drugstore occasionally; but the way people stared at me to see me drinking something that looked like beer, even in a drugstore, made me feel I was not doing exactly the right thing. In fact, I one day overheard a small boy telling his mother something like this: "Mr. Root drinks beer. I saw him drink some in Dr. —'s drugstore." There was no use of explaining that I took it for medicine. Public opinion, even that many years ago, was fast climbing up on the right side. Now a word about exaggeration:

The Cleveland *Plain Dealer*, from which I have quoted so much, has now a couple of I have quoted so much, has now a couple of the opposite column against it. Well, I have been amused at the pleas on the wet side. It seems to me, to use a slang phrase, the writer is continually giving himself away. As an illustration:

The wet writer said if Ohio votes dry, 140 places of business now occupied by saloon-keepers would be vacant. He said there were already enough rooms in the city labeled "For Rent," and if 140 more were added, rents would go down all over the city, for two reasons—first, because there would be an oversupply of vacant rooms; second, because no one could afford to pay the *price* for rent that a saloon-keeper can. I presume the latter may be true; but is it not a rather *sad* truth? And then he goes on to tell the enormous amount of money that would be lost if the saloons were closed. Now, this writer was either purposely or ignorantly "lame" in ever so many directions, for towns and cities that have gone dry all over the United States are giving notice that the empty rooms are soon taken for better business and at better prices. And is it positively certain that it would be a calamity to have rents go down? The liquor people are continually declaring that the money that saloon-keepers do not get is *lost*. If rents go down, the owners of buildings, who are mostly wealthy men, lose a little. Now, wherever there is some loss there is generally a corresponding gain. The renters are usually poorer people, and to have their rents *reduced* would be a gain to those who most need it. Let me illustrate:

Every fall, when I go down to Florida, eggs are away up. A year ago, for a few days I got 60 cents a dozen; then after awhile, when the hens got over moulting, the price began to go down. One day last April, when I brought my eggs to the grocer he said, "Mr. Root, I hate to tell you, especially as you are such a good and reg-

ular customer, that we are overstocked with eggs. I do not see how we can allow you over 15 cents a dozen." But I laughingly replied, "Why, Mr. Burnett, you need not feel worried at all. I just enjoy the fun of selling eggs at 15 cents a dozen. You see, what is my loss is somebody else's gain; and poor people who have been finding it hard to meet the high cost of living now have a great plenty of the best and most healthful food in the world so cheap that the whole family can live on eggs if they wish to."

The whole plea about vacant stores, people out of employment, etc., is just what Mark Twain said about the report of his death—it is "greatly exaggerated."

On page 912 of GLEANINGS for October 1 I gave you a number of illustrations showing how the claims of the liquor party were "greatly exaggerated." Suppose, dear friends, I had kept on getting a glass of beer every night after dark, when I was tired out after a day's work. Suppose I had followed it up for fifty years. This is a ridiculous supposition, however, for I

probably should have been dead and gone (like the doctors) years ago. While I write these words on election day, Nov. 2, I feel so spry and so well I have been thinking I should like to take a foot race with some of my grandchildren—with Ralph, for instance, one of the Boy Scouts. He is about a dozen years old, and I rather think I could beat him now on a short run.

Now notice where the first one of my texts comes in, and the last one—"But the path of the just is as the shining light, that shineth more and more unto the perfect day." This illustrates why I thank God for having permitted me to live and be in touch with, and have a place with the best men and women of the present day. I am thanking God that he has enabled me to have a voice in pleading for temperance, righteousness, and purity as I have been doing for months past. And if I should be permitted to live long enough to see Ohio dry, I shall feel like saying with Zacharias of old, "Lord, now lettest thou thy servant depart in peace, for mine eyes have seen thy salvation."

TEMPERANCE

Today, Oct. 28,* while I dictate these lines before starting for Florida, and before election, nobody knows what the outcome of our voting here in Ohio will be; and of course the following clipping from the *American Issue*, when it comes before you, cannot affect the outcome of our Ohio election; but it can effect the elections that are to be held in the other states over the country. The clipping is headed, as you will notice, "A Startling Comparison." And indeed it is startling. As I read it over I pondered and wondered how it is possible, with these sights staring us in the face, we have put up with it, all these years since Lincoln's death. Read it, dear reader, over and over again. Read it to your wife and children, and explain its influence. Make

them understand that permitting the traffic to go on as it has been going on is worse than war, smallpox, bubonic plague, or any thing else in the whole wide world. May God help us. Here is the clipping:

A STARTLING COMPARISON.

The June, 1914, bulletin of the Ohio Board of Charities and Corrections gives a statistical report which shows a full year's experience of all Ohio counties with and without saloons. For that full year there were 45 dry and 43 wet counties. Separate the counties into two groups, the wet and dry, and tabulate the cases of crime, incorrigibility, and jail experience, and take into account that the wet counties have three times the population of the dry counties. This is the result:

The 45 dry counties sent to the Boys' Industrial School during the year.....	76
The 43 wet counties, entitled by population to send 228, actually sent.....	260
The 45 dry counties sent to the Girls' Industrial Home at Delaware.....	31
The 43 wet counties, entitled by population to send 93, actually sent.....	89
(With large unreported number from Cleveland to add to wet side.)	
The 45 dry counties sent to the Ohio Penitentiary	106
The 43 wet counties, entitled by population to send 318, actually sent.....	609
The 45 dry counties sent to the Mansfield Reformatory	83
The 43 wet counties, entitled by population to send 249, actually sent.....	582
The 45 dry counties sentenced to work-houses	118
The 43 wet counties, entitled by population to send 354, actually sent.....	967

* The outcome of the Ohio election, as probably every reader of GLEANINGS knows by this time, was a victory for the wets. The prohibition amendment lost by a majority of a little over 57,000. With all the votes counted, the dries found they had been defeated by a majority of 30,000 votes less than the majority which defeated the similar amendment last year. Fortunately for the cause of prohibition, the wets' proposed amendment entitled "Constitutional Stability" was overwhelmingly defeated. This provision, if it had been passed, would have made it impossible for the dries to bring a vote upon state-wide prohibition within six years. It is not probable that this notorious measure will be heard of again. The majority which defeated prohibition this year came, as last, from Cincinnati.

The 45 dry counties sentenced to jail imprisonment	497
The 43 wet counties, entitled by population to send 1491, actually sent.....	2646
(With Cleveland not reported to add to wet side.)	
The 45 dry counties expended for maintenance of jail prisoners	\$21,316.06
The 43 wet counties, entitled by population to \$63,948.18, actually spent.....	\$139,750.07
(With Lucas and Clarke, cities of Toledo and Springfield, not reported, and yet to add to wet side.)	
Cost of jail prisoners in 45 dry counties one year	\$21,316.06
Same in <i>Hamilton County alone</i> , with only one-third the people.....	\$21,037.90

This shows that the presence of the saloon doubles and trebles the disorder and crime with its consequent expense to the taxpayer. It is to be noted that the cost of criminal prosecutions is much greater in wet counties.

Nothing is wanting to show the benefits enjoyed by the dry counties; but when you consider that Ohio dry counties have the disadvantage of wet neighbors, and that the wet counties have more than half their territory dry, the above contrast is not only startling, but it amounts to *absolute demonstration*.

OUR FARM PAPERS AND OUR CLASS JOURNALS; THE STAND THEY ARE TAKING AGAINST BOOZE.

For the past six months it has been my privilege to glance over hastily toward a hundred periodicals that come to our office in exchange for GLEANINGS; and it rejoices my heart to see that almost every periodical—in fact, I might say *every* one (except some of our great city dailies and a few others) comes out with bold editorials for prohibition. Let me give you a sample. This comes from the *Fruitman and Gardener*, Mt. Vernon, Iowa. See what the editor says:

CLOSING THE SALOONS.

It is interesting to note the gradual closing in on the saloon by the anti-saloon forces. A little here, a little there, once in a while a step backward, but almost always a step in advance. It is literally trench fighting—hand to hand conflict.

It is also interesting to note who is the most able assistant of the temperance forces. Their most able assistant is the saloon-keeper himself.

This is noticeable everywhere the fight is on—nowhere more than in Chicago just now. In that city Mayor Thompson issued an order that the state law should be enforced. This meant Sunday closing of saloons. With what result? Mass meetings were held, and the keepers of the saloons decided to disobey the law. They seemingly thought that in their numbers there would be sufficient influence to overawe the law.

The saloon-keeper seems to be a natural-born hog. He never seems to know when he is well off. He is always grasping for everything in sight. This is his undoing. It was his undoing here in Iowa, where his partisans attempted to block all legislation on the subject, although they were in a small minority. It has been his undoing everywhere. Here in Iowa the opponents of the saloon turned and closed all saloons in the state—something they would not have done for a number of years had they not been goaded into it. And the opponents of the saloon in

Chicago will eventually get a tighter hitch on the saloon because of the action of the saloon-keepers.

The italics in the above are my own. It is a little tough on the saloon-keeper, I know; but the point is that just now no man will go into the saloon business and pay for a license unless he is one of the lowest and most depraved specimens of humanity—one who is willing to brave the scorn of his fellow-men, including the women and children, just because he thinks here is an opportunity to "get rich quick."

The above clipping suggests that the saloon-keeper himself is going to be "the most able assistant of the temperance forces." The following, also from the *American Issue*, illustrates this point. To understand it you want to consider that after that dry Sunday in Chicago the saloon-keepers (7152) came out with a big wail, saying they had lost \$400,000. When I read it to Mrs. Root, she said, "Why, my dear husband, you are certainly making a mistake. You mean \$40,000." But I took another good look and found it was the same in all the papers.

Saloon-keepers in Chicago positively declare they lost \$400,000; and a *thousand or two* have declared they would go out of business if they could not have *their best day in the week* for trade. The poor fellows in this wail evidently expected to get sympathy; but that is where they put their foot in it. A lot of people in Chicago were like Mrs. Root—they could not believe it possible that toward half a million dollars went for booze every Sunday in Chicago, and perhaps it is not true—we hope so. They tried to make out, as usual, that this sum of \$400,000 was *lost*—that is, *they* lost it, and may God be praised that they did "*lose*" it. Yes, stupidly as usual, they forgot that what was *their* loss was a gain for *somebody else*. Now read the clipping I have been talking about:

DRY SUNDAY HELPS BUSINESS.

One incident in connection with Chicago's new experience of worrying along over Sunday without taking its nip, or a multiplication of nips, ought to be of particular interest to the merchant. We refer to the report from that marvelous department store, Marshall Field & Co. The management is reported to have said that they did the biggest Monday business in their history, following the second dry Sunday.

The saloonkeepers (7152) themselves say that they lost \$400,000 as a result of the dry Sunday. This wail, read in the light of Marshall Field's report, gives a hint as to how to divert into legitimate channels money that is now being worse than wasted.

Close the saloons.

Please notice that quite a part—perhaps a large part of that \$400,000—went to other great establishments for household sup-

plies as well as to the drygoods store of Marshall Field & Co. Thousands of families, perhaps greatly in need in a great city like Chicago, have *now* the necessities of life because of that closing on Sunday. Dear reader, can you not see and rejoice with me that God's kingdom is coming?

Just after I dictated the words above, there was handed me the following, clipped from the *Akron Beacon-Journal*:

PRICE OF DRINK VARIES FROM DIME UP TO DAMNATION; FORMER COUNSEL FOR WETS SCORES LIQUOR AT DRY MEETING.

Trenchant utterances against the liquor traffic were unloosed by Dan Morgan Smith, former general counsel for the National Model License League, but now aligned with the Anti-saloon League.

"The price of a drink ranges from a dime to damnation," said Smith. "The purchaser pays the dime when he gets the drink, and the damnation when the drink gets him."

"The price of drink ranges from ten cents to unpaid rent bills, unpaid grocery bills, unpaid doctor bills, foreclosed mortgages, protested notes, lost positions, hungry children, broken-hearted wives, and corrupt government.

WHY SALOON STAYS.

"The saloon has been tolerated in this country, not because it was a working man's club, not because of the taxes it pays, not because the public demands it be licensed, not because it fills a great need, but because some church members pray for their state to go dry while they vote for legislators whom they know will keep it wet."

Smith scored the moderate-drinking argument. "The moderate drinker of today is the drunkard of tomorrow," he declared.

Does not the above represent the opinions of all the advocates of the wet side?

We clip the following from the October issue of the *Independent*:

From 1860 to 1907 there was a very rapid increase in the consumption of alcoholic liquors, beginning with six and a half gallons per capita and reaching nearly twenty-three gallons per capita. Then for several years there was little change, and, indeed, a slight lessening of the per-capita rate. This, of course, was due to the increase of prohibition territory. Now, for the first time there has been a great downward swing, and a falling off in consumption of 15,000,000 gallons of distilled spirit and 6,358,744 barrels of beer in one year.

When somebody tells you that the consumption of liquors is now on the increase, just point him to the above.

DOES PROHIBITION KILL BUSINESS?

James R. Hanna, mayor of Des Moines, Iowa, furnishes an article as follows:

"I have to report that our first eight months' experience has in every way been immensely beneficial. The fear of many that business depression would follow the closing of saloons has not been realized. Practically all desirable places were almost immediately occupied by other lines of business. The money which went into the channels of the liquor trade has gone into the channels of legitimate business. Our expenditures last year for liquor were estimated at about \$2,000,000, and careful tabulation of shipments so far this year are estimated at about one-tenth of that amount. This \$1,800,-

000 difference is going to pay for groceries, fuel, clothing, lumber for home-building, payments on town lots, and a thousand other things making for the welfare of those who bore the burden of expense in this business.

"It is nonsense to argue that a city of 100,000 can throw away \$2,000,000 each year for something that in no way conduces to the actual needs or comforts of life without paying the penalty. Our police records, court records, inebriate records, pauper records, and charity records all show this clearly, thus early. The superintendent of our public schools reports a decided improvement in the dress, attendance, and the efficiency of the large class of pupils from families affected by the liquor business. —*Ashland Times-Gazette*.

JOHN L. SULLIVAN, THE CHAMPION PRIZE-FIGHTER—SEE PAGE 779, SEPT. 15.

In the *Outlook* for Oct. 27 we see a full-page illustration of John L. Sullivan "clothed and in his right mind." Underneath the picture we read as follows:

The one-time champion pugilist has just signed a five-year contract to speak against John Barleycorn and all of his works, in every part of the United States. From being an advocate and frequenter of the saloon Sullivan has become one of its most influential opponents.

The magazine also contains quite an editorial in regard to the emancipation and transformation of our good friend John L. Sullivan. Sometimes we hear it said that the day of miracles is past; but is there a greater miracle than a man like Sullivan, who stood the greater part of his life almost at the head of the bad element of this world, now transformed into an evangelist for righteousness? Take a look at his picture in the *Outlook* and thank God that, by the power of the gospel of Christ Jesus, even the leopard "may change his spots."

A KIND LETTER FROM A LADY BEEKEEPER AWAY OFF IN NEW ZEALAND.

Dear Mr Root:—I am a young lady beekeeper, and read GLEANINGS regularly. I have about 80 colonies at present, and use a Ford car to get to and from the apiary, which is over 40 miles from home. I have used a four-frame hand extractor previously, but am getting a power one this season. I can do all the work of the apiary except heavy lifting, for which I get an assistant at the busy time.

Our young men are going in large numbers to the war, and being killed. Lists of killed and injured appear in every paper. One wonders what will be the end of it all.

We are holding a beekeepers' conference in Wellington, in the North Island, in June. We beekeepers away in this corner of the earth send you our kindest regards, and trust you will be spared many years to continue your good work in the Home papers.

MABEL SHEPHERD..

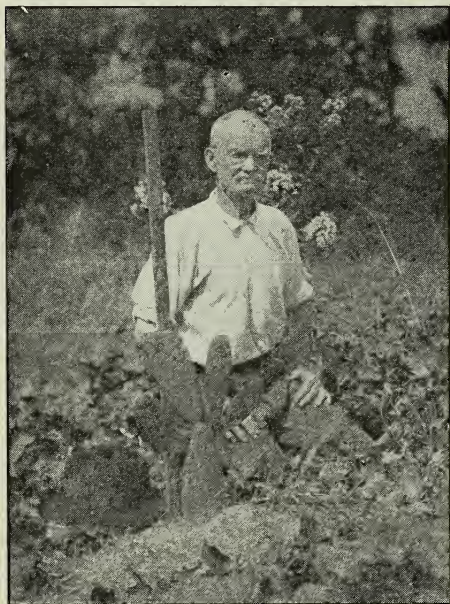
Christchurch, New Zealand, May 24.

[We are very glad to get a letter from a lady beekeeper, especially from one so far away; but it saddens me again to think that away off in New Zealand the war is taking its toll of death and destruction, and accomplishing nothing after all. May God help us.—A. I. R.]

HIGH-PRESSURE GARDENING

SPINELESS CACTUS IN FLORIDA; OUR SPINELESS CACTUS IN OHIO.

By comparing the picture below with the one on page 825, Oct. 1, it seems quite evident that spineless cactus makes a better growth here in Ohio than it does down in Florida, especially in Florida in summer time. I presume so much wetness in summer is bad for cactus in Florida, but I think the wetness here in Ohio during the past summer is pretty nearly equal to that of Florida, especially in the frequency. The Florida cactus was planted last March, while the Ohio cactus was not planted out till July. I told our good neighbor, Mr. Harrison, to place some object near the plant so our readers could judge correctly of its size. I presume I should have done so with our Ohio plant.



SOME OF THE SPINELESS CACTI, AND A GLIMPSE OF OUR FLORIDA GARDEN.

My good neighbor, Mr. Harrison, is a fair illustration of the wonderful results of our climate on old people. I believe Mr. Harrison is about 80 years of age. The picture also illustrates the way sweet potatoes and yams grow when they once get started. In the background, right back of Mr. Harrison, is a specimen of the dwarf poinsetta in full bloom.

SPINELESS CACTUS IN CALIFORNIA—A GOOD REPORT.

Mr. A. I. Root:—I have been reading all you have said about cactus in the last few issues of

GLEANINGS, and would say that I have been propagating between one and two acres for several years, and find it the most interesting plant I ever cultivated. Chickens eat it readily, and it is good cooked; and if it is raised on quite dry land it tastes very much like currants. It should be eaten with cream or milk, and honey on it.

I think the reason those rotted (see p. 826, Oct. 1) was because they were cut from the old stock a little too early, which caused them to turn to sugary sap and become yellow in color. In this condition flies will blow or lay eggs in them, and they will be eaten by the fly larvæ.

Outworms also eat the chits when they first start to grow if grass and weeds are allowed to grow among them. The cutworms should be dug out of the earth the same as where they eat cabbage or tomato plants. Army worms also work on cactus sometimes.

The ground must be kept loose by cultivation, and cactus will do well on the driest mountain land; but if not cultivated they soon fail. They do quite well without irrigation anywhere. As food it seems to be very healthful. I have about twelve varieties of the spineless, and two kinds of that having spines. I paid from two to five dollars per slab, and these have increased to hundreds.

I see no reason why cactus could not be eaten as much as bread or potatoes; and two or three square rods would furnish a large amount of food. The small spines or bristles on the fruit can be quickly brushed off with a whisk-broom. I also eat the fruit with milk and honey, and it tastes like strawberries.

Cactus slabs should not be cut from the old stock until it is about ready to put out shoots for new growth. Then they should be placed in a partially shady and dry place until they begin to start roots. Then plant in the field. They do well laid on the top of the ground without burying in the soil in planting.

Owensmouth, Cal.

C. W. DAYTON.

I take it from the above that the cactus slabs when cooked are fit to eat as well as the cactus fruit. If this is true it is quite an important fact in favor of growing cactus.

CACTUS AT \$15.00 A TON INSTEAD OF \$2.00 OR \$3.00 A LEAF.

Your cactus writings are interesting when you tell of paying over one dollar for a slab down in Florida. We sell it here by the ton. I should like to send you a few carloads at \$15.00 a ton. Several of our neighbors here have fed it to cows in place of ensilage, and they gave as much milk. I have one plant eight feet high, and this is its second summer's growth.

Lakeside, Cal., Oct. 18.

G. E. PHILBROOK.

Thanks for your report, my good friend. The price of \$1.75 per leaf or slab is the highest I have paid. The plant I have in my garden here in Medina was advertised, I think, at \$4.00 to \$5.00 a leaf; and in about 90 days here in the North it has produced eight new leaves pretty well approaching the size of the parent leaf. Just now, October 23, I am blanketing it to protect it from frost until I pull to pieces the whole plant to take it down to Florida.

SWEET CLOVER IN KANSAS.

I hold in my hand a very important bulletin just sent out from the State Board of Agriculture of Kansas. It contains 38 pages in regard to sweet clover, illustrated with numerous cuts. From it I make two extracts:

The first is in regard to sweet clover for honey, and the second contains the important fact that cattle will eat the straw after thrashing out the seed. I think it has been several times mentioned that after cattle and perhaps other stock acquire an *appetite* for sweet clover they will eat with avidity the dry stalks after the leaves and seed have fallen off.

KANSAS SWEET-CLOVER EXPERIENCE.

Sweet clover is the best plant for bees I ever saw. Two years ago I sold 940 pounds of honey from sixteen stands of bees, besides what we used in the family and gave away. It was as white as white-clover honey, and tasted just as well.

I have tried it for pasture for cows by sowing it on alfalfa ground and disking it in. It prevents bloat, as the bitter taste of it, called coumarin, prevents bloat. I have used it for hog pasture. Hogs are very fond of it.

I use the yellow sweet clover. It does not grow as rank as the white variety, and is earlier. It commenced to bloom the last week in April and bloomed continuously until July 10. It will grow in the shade, and in places where alfalfa will not grow. It is a biennial, and dies out the third year; but if allowed to do so it will reseed itself. It is quite difficult to secure the seed, as it shatters so, and requires a huller to get clean seed. It will bear cutting the same as alfalfa, but must be allowed to seed itself the second year. It does not require the ground to be plowed. Disking and harrowing is all that is necessary.—JOHN W. WILSON in Kansas Farmer.

STOCK DEVOURED SHREDDED STEMS.

When the sweet clover is permitted to seed, the stems are very woody and hard. I concluded before I thrashed the stuff for seed, the seed was all I would get out of it, and that I would have to let the dry leafless stems rot. There is where I was surprised pleasantly. I not only made a good profit from the seed, but the live stock ate those shredded stalks ravenously. Of course, the thrashing-machine tore the dry stalks to pieces—shredded them. The cattle seemed to enjoy it as much as ensilage.

As a pasture I know it is hard to beat. It will grow on land where alfalfa and red clover won't do well. But after sweet clover has been there a few years and thoroughly inoculated and built up the soil, red clover and alfalfa will do well.—H. L. DAWSON, Osage City, Kan.

I presume this sweet-clover pamphlet may be had by applying to the Kansas State Board of Agriculture, Topeka, calling for circular 44.

PETERITA IN KANSAS.

This same bulletin contains 28 pages devoted to *feterita*. The matter is well illustrated with beautiful engravings showing both sweet clover and *feterita*, and these are very valuable documents. The statement in regard to *feterita* emphasizes

the fact that it will grow during a dry spell and produce a crop when corn and almost everything else was a failure. I am surprised, however, that nothing is said about it as a substitute for wheat in making bread, cakes, etc. Our own *feterita* here in Medina has been slowly maturing because of the cool weather and almost incessant rains all summer long. As I write, Sept. 30, just a few of the heads have sufficiently matured so that it will be just right to cook as a breakfast food; and I for one consider it a most delicious dish. The seed is very easily separated from the heads, and, in fact, it will drop off if it is not harvested at just about the right time; and I cannot imagine a much shorter cut from producer to consumer. Just lay the heads in the sun for a day or two, thrash out the grain, and boil it as you would boil rice or oatmeal. Put on some honey, and butter and cream; and if you do not like *feterita* I shall be surprised.

SWEET CLOVER NO LONGER A DESPISED WEED.

It has been toward forty years since I began to declare that sweet clover is *not* a weed, and that *no* clover should ever be classed with noxious weeds. Those of you who have read GLEANINGS for forty years know what a storm of abuse I have been receiving for the stand I have taken, up to the last three or four years. I have just looked back through the old numbers of GLEANINGS, and I find there letters from beekeepers who were feeding sweet clover to cows and other stock, and the stock ate it in preference to anything else, and did better on it. With such testimony as that, coming more or less for *forty years*, every little while somebody was stubborn and contrary, and declared it would be the ruination of farmers, like Canada thistles, if it once got a start. This whole matter was brought to mind just now by the receipt of a pamphlet of about 25 pages, sent out by the I. H. C. Agricultural Extension Department, Harvester Building, Chicago. It is sent to any address for 4 cts., or for 3 cts. each in quantities. I will give you just a glimpse of where sweet clover now stands by quoting one letter from the pamphlet mentioned:

THREE THOUSAND ACRES OF SWEET CLOVER; GARDEN CITY BANKER GIVES SOME REASONS WHY HE BELIEVES IN IT.

About eight years ago I started to feed this sweet clover, the white-blooming (*Melilotus alba*) variety, which is considered the best; and from watching my stock feeding on it I began to believe that they did better on sweet-clover hay than almost any other roughness, so I commenced to spread the fields and got to sowing it until now I have about 3000 acres—this, too, on good alfalfa land when clover seed is high and alfalfa seed is cheap; consequently I must

deem it of some value as compared to alfalfa, and also must have some reasons for sowing sweet clover. Here are my reasons:

Sweet clover has proven to be as good feed for all kinds of stock as alfalfa.

It makes a better early pasture, will not bloat stock, and is easier grown.

It grows without much preparation of the ground, will grow on ground too poor for any other crop, and is about the best fertilizer for worn-out soil of any of the clovers.

Last year, from 120 acres of ground I got a little over 900 bushels of seed, which sold for \$10 to \$15 per bushel.

Last year I sold a carload to one seed-house—the first carload lot known to have been sold by any one grower of sweet clover.

This year I harvested about 600 bushels off 200 acres, and it is selling at \$15 per bushel for the hulled, re-cleaned seed.

I attribute the reason for sweet-clover seed being so high and alfalfa seed so cheap to be because alfalfa will grow in only a few states profitably, while sweet clover will grow in nearly every state in the Union, if not in every one.

It produces the best blossom for bees of any of the clovers.

It is a help to orchards, keeping down weeds, making hay as well as fertilizing the land.

I cut my first crop for hay the latter part of May. The last of August the seed is ripe, then another short hay crop. You can allow the first crop to go for seed, but the stems get pretty thick and full, so that it is harder to handle. It is a biennial legume plant, so that the first year it does not go to seed, but will seed the next year. Enough seed falls off every fall to reseed the ground so that it is a continuous crop similar to alfalfa.

I thrash with a regular grain-separator, either out of the stack or shocks.

I think 10 lbs. of seed per acre is sufficient to sow in this section.

I prefer to sow in the fall and winter. The seed is of a hard nature, and seems to like some freezing weather. A good many have excellent success by sowing in February, March, April, May, and June.

I think a good deal depends on the season; in fact, almost all.

Prepare land about as for alfalfa. I have had good success, however, by sowing right on the sod and then harrowing or disking.

The yield is about the same as alfalfa, but it makes a larger tonnage than alfalfa under similar conditions.

It seems to stand all kinds of pasturing, both in the spring and fall.

I know of some fields that are pastured clear up into May, and then make a good crop of seed and a hay crop besides.

I do not think it lasts as long as alfalfa for pasture in the fall.

There is no bad effect on the milk of cows pasturing sweet clover or eating the hay. I refer to the white-blooming variety.

I am absolutely positive about its not bloating any kind of stock, and it will not give horses the heaves as alfalfa sometimes will.

A good crop of seed averages from about 4 to 15 bushels per acre. I have had it yield as much as 15 bushels per acre.

I consider it equal to alfalfa as a feed; that is the reason I am growing it in preference to alfalfa—one of the reasons, at least.

SWEET-CLOVER SEED—GETTING THE HULLS OFF.

Could you tell me how to hull a small quantity of white-sweet-clover seed for experimental purposes? Can it be done without a special machine?

Conneaut, O., Aug. 15. D. B. PHILLIPS.

My good friend, I am sorry to say I know of no way to get off the hulls of sweet-clover seed without a special machine. Just now I am gathering seed from that special plant described in GLEANINGS, and I thought may be it would germinate better if I could get the hulls off; but as the seed was not yet dry, it seemed next to impossible, so I planted it with the hulls on, and I am glad to tell you it was up nicely in five days from the day of planting. I think seed taken direct from the plant before it is dried out will germinate quicker than the usual dry seed with the hulls on.

DRAINAGE, BOTH NORTH AND SOUTH—THE IMPORTANCE OF IT.

With the light sandy soil we have down in Florida, as a rule, one might think that drainage is of less importance than here in Ohio on our clay land; but the fact is, no first-class results are secured in Florida—at least in Manatee Co., without good thorough drainage. My neighbor Rood has put in hundreds of dollars' worth of tiles; and our experiments in tiling have shown such good results that where I have not got in tiles I have raised up the beds of soil perhaps a foot or more above the paths that carry off the water during our great rains. The question has often come up as to whether it will pay to put in tiles, and, furthermore, how deep to put them, how far apart, etc. The clipping below, from the Jacksonville *Times-Union*, answers it more directly than anything I have before come across:

DRAINAGE FIRST.

"My land is low, wet, and sour. What kind of lime should I get to sweeten it, and how much will be necessary?"

Answer.—Before applying any lime, establish good drainage. This means that the standing water in a hole dug the day before will not come nearer than 2½ feet to the surface of the soil, and we would much prefer to have the distance at least three feet. There is no surety in cultivating land with good results, whatever you may do in the way of liming, fertilizing, and tilling, unless you have good drainage. After you have made your water conditions right, apply about three tons per acre of ground limestone, which should be bought in car lots, minimum fifteen tons.

Dig a hole or several holes in your garden some time when it does not rain, and then come around and see if water is standing nearer the surface than 2½ feet. I suppose 2 feet would do pretty well, but no doubt 2½ feet or 3 feet would be better. Keeping watch on how high the water stands in the holes you have dug will aid you in deciding how deep and how far apart to put the tiles. If the work is well and properly done, you will have something that will pay you good interest year in and year out for the rest of your lifetime.

POTATOES AND POTATO-GROWING HERE IN THE NORTH.

About the first thing I did after I got back to Ohio last May was to plant some potatoes. I sent and got half a bushel of Early Ohio and a peck of Six Weeks. The latter are said to be a little earlier than the Early Ohio. I think both were planted about May 15; and as the weather was favorable both made a good growth. Now, our Medina garden has grown potatoes for a dozen years or more, and potatoes have been on the same ground year after year. The consequence is, they usually scab badly. There are grubs and worms also that seem to bite into them. It illustrates the folly of trying to grow the same crop year after year on the same ground. Mrs. Root finally declared that she did not want any more potatoes planted in that old garden. Well, the Six Weeks grew rather better than the Early Ohio, and they ripened up quicker. From the peck, I got about three bushels of nice potatoes of good quality, with very little scab. I have just now planned to ship them down to Florida to try them there. The half-bushel of Early Ohio gave also about a barrel, but was later in ripening, and therefore caught the blight, and were also fearfully scabby, and gnawed up by worms and grubs. Besides that, they were badly rotted, and kept on rotting after they were dug and put into a cold cellar.

It has been said that the Early Ohio has been grown for so many years that it is "worn out;" but because of its excellent quality a good many still hold on to it. Well, now, there is a good deal in getting the right variety of potatoes or a potato suited to your soil. A little later I planted a few Idaho Russets. These were not scabbed at all, but the blight stuck the vines before they were quite mature. I also planted a few Carman No. 3. These gave a nice crop of smooth potatoes with just a little rot; and my son-in-law, whose garden adjoins mine, had a dozen bushels or more of very nice smooth Carmans. But potatoes have not been grown on his ground as long as on mine. By the way, when you discover your potatoes are beginning to rot, especially if the season is wet like the one just past, the sooner you get them out of the ground and get them thoroughly dried out, the better. Of course they should be dried out in a cool dark place, for sunlight injures potatoes for table use, as any good housewife can tell you.

The complaint has been made that the general run of farm papers give only good reports—successes and *not* marked failures

—so I think I will give you a report of one of my failures.

About the first of June I saw a potato highly recommended in one of the catalogs. It was called the Commercial. One potato would be sent by mail for 15 cents. I accordingly sent for one; and as it was of good size I cut it so as to get 17 eyes. The weather was favorable, and they made a most astonishing growth. I gave each plant extra care, and each vine grew so it could be raised so as to reach as high as my head; and some of them were almost as large as a hoe-handle. I expected an enormous yield, and was planning to tell the readers of GLEANINGS how I got a *barrel of potatoes* from only one potato planted. Well, after the vines died down (I think they were cut short by blight) I proceeded to dig them. How many potatoes do you suppose I got from my 17 hills? Not enough to fill a quart basket—quite a difference between a quart and a *barrel*! I noticed that the ground was flat and not being heaved up as we generally see it where there are great growths in the potato-vines. I saw a *few* evidences of small potatoes that had rotted, but nothing to mention. In some hills where there was this great growth of vines there was *not* a potato at all. Now, it may be that this Commercial potato is very late and needs a long season to mature; and possibly the blight struck it before it had had a chance to set and grow tubers. It also illustrates the fact that certain varieties are adapted to certain soils or localities. I presume I have tested a hundred or more varieties of potatoes that have been highly recommended; but only a few seemed to be adapted to our Medina clay soil. Of course I might have warded off the blight by proper spraying; but we have so few potatoes here that I did not think it worth while; and I am inclined to think the unusual wetness had much to do with the prevailing blight in this region. In fact, there were times when the vines and foliage did not get sunshine enough to dry them out, for many days in succession. In our Florida home, pretty much all the varieties I have tested gave a fairly good yield.

 REDBUGS, SO CALLED; ALSO SOMETHING ABOUT MULCHING POTATOES WITH PINE NEEDLES.

I have a patch of dewberries in my garden which are heavily mulched every spring with manure and straw (pine leaves). Last spring, before putting on the mulch, I took some potatoes about an inch in diameter, and planted them whole, down the middle of the rows, barely covering them. Then the mulch was put on and nothing else whatever done to them until digging time. The result was four bushels of potatoes, fine ones, from about ninety hills. Neither

bugs nor blight troubled them, and the vines remained green at least a month after those planted in the ordinary way and sprayed were dead.

I have just seen your note in GLEANINGS for Feb. 15, about the Florida redbug. Some fifteen or twenty years ago I saw published in some paper a preventive which has since given me untold benefit, and which has been worth many dollars to me, as I am very sensitive to redbug bites. Such bites will give me more trouble than forty beesings. I have been getting them ever since I can remember (when not using a preventive), and haven't become insensible to them yet. Take fresh oil of cloves (that which has turned dark with age is little good), and rub a few drops on the ankles every morning before putting on socks or before going where you are liable to get redbugs. I have gone into blackberry-patches, among old logs, etc., where redbugs are thickest, and not received any at all, or very few, while if I omit the oil of cloves I get dozens of them on me. When picking berries, it is well to put a little around the waist, on arms, etc. This is not quite as efficacious for women as for men, as their skirts catch them, I suppose.

May God bless you, and spare you many years to prove my remedy and to continue your fight for the right.

A saturated solution of kerosene oil and gum camphor is good after the bug gets on, and is picked out with a sharp-pointed knife.

Arcola, N. C., Feb. 25.

J. F. HUNTER.

My good friend, I fear from your concluding sentence that what you call redbugs in your locality are different things from the Florida redbugs. There are three insects that worry humanity down in Florida—first, the sticktight flea. This bothers the poultry by getting on their combs and wattles—especially the Leghorns and Spanish, which have large combs. These sticktight fleas are well described by their name, and you can pick them out with a pair of tweezers after they start to burrow in the chickens or on your ankles. The redbug, however, is almost microscopic—in fact, I have never been able to see one. They trouble us more or less every season without fail, while the sticktight fleas have not appeared on our premises for the last two winters. They live principally in dry sand, under buildings and such places. When there are abundant rains they are seldom found.

The third insect, I believe, troubles me most of all. It is the well-known common chicken mite. To make sure I was not mistaken I sent a sample to Washington. I do not remember that we ever had any on our premises until I bought a pair of guinea fowls of a party in Pennsylvania. I sent for them with the understanding that they would keep away hawks; but they did nothing of the kind, for they rambled all over our five acres, and might be up in the tops of the highest trees while the hawks were making a swoop for the chickens on the ground. The first season that we got guineas I found a sitting hen literally covered with mites—at least the nest-box was

swarming with mites. We burned up the straw that was in the nest and put the box on top of the fire until it was charred inside and out; then soaked it with moth-balls dissolved in kerosene; and this latter remedy is cheaper and more effective, according to my experience, than any of the much-advertised chicken-mite remedies.

Our worst trouble is with sitting hens. If you are not very careful you will find mites crawling on the eggs from the sitting hens. A galvanized-iron nest-box has been recommended; and I am inclined to think it would be a good thing. When I sent a sample of the mites to Washington they said it was quite unusual for the mites to be found on human beings. They do not seem to trouble Mrs. Root; but they get under my arms and under my knees—sometimes in my hair, and not only annoy me by their crawling about, but they sometimes bite excruciatingly. I hope it is true that only on rare occasions will they pester and annoy persons as they do myself.

In regard to mulching potatoes with pine needles I have often wondered whether pine needles were good for anything. I can readily understand that the strong odor from these turpentine pine needles should repel bugs, and they may also possibly repel blight, as you suggest in your letter. I expect to try it soon.

"LOOK OUT FOR PICKPOCKETS."

The following, clipped from the *American Poultry Journal*, illustrates a plan that is getting to be too much the fashion of late in the way of picking the pockets of good honest hard-working people:

Charged with using the United States mails to defraud, G. A. Davenport, aged 34, of Brookville, N. J., has been arrested at Apollo, Pa. According to Postoffice Inspector J. D. Wardle, of Trenton, N. J., Davenport operated under the name of the Cedar Ridge Poultry Company at Brookville, and advertised in the daily papers to sell baby chicks at seven cents each. Instead of filling the orders he received with the cash, he disappeared. Later he was located at Apollo, Pa., where he was operating under the name of the Kiski Poultry Farm. His Uncle Samuel will now take care of him.

I have given place to the above, principally to ask our friends if they know of anybody in the bee business who has been doing similar work in, say, advertising queens at a low price. If so, give us the information and we will give him free advertising. And this illustrates what I have mentioned before—be careful about sending money in answer to any advertisement that does not have some name signed to it in black and white instead of some high-sounding title like "Poultry Farm" or "Bee Farm," etc.